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AMERICAN AGRICULTURIST.

Agriculture is the most healthy, the most useful, and the most noble employment of man.—WASHINGTON.

VOL. IX. NEW YORK, JUNE, 1850. NO. VI.

A. B. ALLEN & R. L. ALLEN, *Editors.* C. M. SAXTON & E. BLANCHARD, *Publishers.*

THE

AMERICAN AGRICULTURIST

AND

FARMERS' CABINET.

PUBLISHED ON THE FIRST OF EVERY MONTH

BY

C. M. SAXTON & E. BLANCHARD, 120 FULTON st. N. Y.

JOSIAH TATUM, 50 NORTH FOURTH ST., PHILA.,

J. C. BUTTERS, 19 STATE ST., BOSTON.

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MANURES—THE FOOD OF PLANTS.—No. 2.

THE known fact of the existence of the ten or eleven inorganic substances in good soils, that are always present in the ash of our cultivated crops, has led some prominent writer on agriculture, to advance the doctrine, that the application to the soil of suitable portions of the inorganic food of plants—potash, soda, &c., were the only manures required to produce large crops, and keep up the fertility of the soil, and that the *soil naturally contained*, with that derived from the atmosphere, and rain and snow water, a full supply of the organic constituents, or food of plants, viz: carbon, oxygen, hydrogen, and nitrogen, while others as confidently assert that the ammonia in farm manure, night soil, guano, &c., is the most important and valuable part of the manure. But I shall not here undertake to discuss these points, but would say to practical farmers, that there are so many well-authenticated facts of the beneficial action of saline and mineral manures, in increasing the produce of various farm crops, that no farmer can run a very great risk in employing large quantities of them in his compost heap, where they can be obtained at cheap rates, for I speak from experience.

There are thousands of farmers who reside near manufacturing and other villages, that could obtain refuse lime from bleacheries, paper mills, tanyards, old lime mortar, oyster shells, &c.; ashes, fresh and leached, from dwelling houses, soap works, potasheries, and other manufactories; bones from slaughterhouses, or from those who extract the oil from the feet, and horn piths from tanneries. These can be broken up, and dissolved in the oil of vitriol, and mixed in the compost heap, or they may be burned, and then easily broken and powdered, by the hammer. Bones supply to plants, phosphate of lime, one of the most needed and important substances required upon long cultivated lands and old pastures. Salt and brine can frequently be obtained *cheap*, from stores where salt pork, mackerel and other pickled fish are retailed. These will supply soda and chlorine. Gypsum furnishes sulphur and lime, and on the lines of most railroads can be had at a cheap rate. Iron, manganese, silex, and alumina are generally found in sufficient quantities in most soils, and they do not require artificial application.

All the above-named substances should be mixed in compost, sometime before applying to the land, as there are various chemical changes effected in the compost heap, by the action of heat, moisture, and the agency of oxygen and other gases, which partially or wholly decompose these mineral substances, and prepare them to be more readily taken up by the plants.

But, important as are these inorganic substances. in the growth of plants, the great bulk of all plants and their seeds are composed of four gaseous, elementary substances, viz: carbon, (in the shape of carbonic acid gas,) oxygen, hydrogen, and nitrogen; and they are termed the *organic* constituents of plants. 98 per cent. of wheat, and 99½ per cent. of fir wood is organic matter, which is dissipated and mingles with the air when subjected to the process of burning. The investigations of Liebig and other agricultural chemists have proved that "by far the greater part, if not the whole of the organic growth of plants, is derived from the atmosphere. The absorption of carbonic acid by the leaf, which is perpetually going on during daylight, invisible as the process is to the naked eye, is the main source of that deposit which forms the visible bulk of the plant itself. Burn it, and the atmosphere *takes back that which it gave*, leaving behind in the form of ash *that which it did not give*. In the act of combustion, the earth and the air reclaim and receive their own respectively. The organic part returns to the latter, the inorganic to the former." The above quotation may be correct, as far as it applies to the source from which forest trees and other natural or uncultivated plants obtain their organic elements. But by supplying our cultivated plants, (that seem to require a larger amount of nitrogen,) with these organic elements in a more condensed form than they are found concentrated in good manure, their favorable action in the increased growth of the plant is indisputable.

The organic part of the manure, while undergoing the process of decomposition in the soil, is resolved into its proximate or ultimate elements, assuming a gaseous state. These gases form new combinations, and are soluble in the water of the soil, which are taken into the circulation of the plant, by the roots. These are important in producing a luxuriant growth, especially, the compounds of ammonia, and the nitrates, as they readily supply nitrogen to the growing plant. The thousand-and-one recorded facts of the great value of the organic constituents of manures render it an important question to the farmer, how he can best save and treasure up for the use of his growing crops, the gaseous or organic portions of the manures usually made upon the farm, as well, also, as from what other sources he can obtain materials to increase his *nitrogenous* manures. In a future number, perhaps, I may attempt to discuss these points. LEVI BARTLETT.

Warner, N. H., Feb., 1850.

BUTTERNUT SUGAR.

KNOWING that our common butternut tree yields, upon being wounded, a considerable amount of sap, I was led to make a trial of it to ascertain whether a sufficient amount of saccharine matter was afforded, to make it an object worthy of the farmer's notice. I accordingly tapped several trees that stood in an open field from each of which I procured about four gallons of sap, which, on being evaporated, yielded five ounces to the gallon, of grained sugar. This sugar had a peculiar honey-like flavor, and would make better molasses than any other kind with which I am acquainted. It was observed that as it evaporated, it had a tendency to form into flakes of transparent jelly, which would render it necessary to be strained and clarified while it was very dilute.

This sugar does not partake of the medicinal properties of the bark. It will be seen that the sap of the butternut yields about twice the amount of sugar that is afforded by the sugar maple, and the quality would be by most persons considered superior. In making sweetmeats and preserves, it would be by most housewives preferred to any other sugar. The experiment was undertaken too late to ascertain the amount of sap which one tree will yield; but I think that it would be quite equal to that of the maple, of the same size, and growing in the same soil and situation.

The saccharine properties of the sap of this tree are common to the whole tribe of walnuts, although they must differ considerably in the relative amounts in each species. The experiment is well worth repeating, and the hint may prove valuable to those whose circumstances render it convenient. In many localities, these trees occur in sufficient abundance to furnish profitable employment during the early part of spring, before labor is required upon the farm.

F. B. H.

Somerville, St. Lawrence Co., N. Y.

AGRICULTURAL GEOLOGY.—No. 3.

A GRANITE soil and subsoil forwarded to me from Springfield, Massachusetts, yielded the following result:—

	Soil.	Subsoil.
Silica,	86.66	92.00
Alumina and peroxide of iron,	0.61	0.80
Silicate of lime,	0.54	0.45
Magnesia,	0.06	0.10
Potash,	0.07	0.09
Sulphuric acid,	0.18	0.26
Common salt,	0.08	0.12
Phosphoric acid,	trace	
Vegetable matter,	4.00	
Moisture,	7.80	6.18
	100.00	100.00

If this composition be contrasted with that of the parent rock, it will be seen that the lime, magnesia, potash, and acids are much less in quantity, while the ratio of silica has increased. This loss is owing to the soil being drifted, in some instances, and in all, having been carried down, (before deposition,) by fresh water, which dissolved out all the soluble saline matters; still, however, there are always, in granitic soils, a remarkable quantity of alcalies, (potash and soda,) which render them so genial for many crops. All those plants which are potash seekers, will grow well in granite grounds, such as corn, potatoes, flax, peas, &c., while those which require lime, will not thrive unless it has been previously added. The deficiencies of granitic soils are generally lime and vegetable matter. However, it may startle some, it is nevertheless demonstrable, that all the granite hills have been in a hot and melted state, and that they were raised in a semifluid, or pasty state, and as they cooled, the minerals contained within them, crystallised and gave that glittering character which all crystalline or primary rocks possess. They have received the epithet *primary*, as being the first formed, and from which, by decay, all the other rocks have been produced.

Syenite is a granitic rock, resembling true granite, in having the minerals, quartz and felpar, but the mica is replaced by hornblende, as hornblende does not decay so readily as mica. Syenite does not form a soil so readily, but when formed it is a richer soil and produces better crops. This may be perceived by viewing the composition of hornblende. It is a dark-green substance, occuring as a mineral and as a rock abundantly in this, and the New-England states. Besides the rock, we give the composition of hornblende soil from Smithfield, Rhode Island.

	Rock.	Soil.
Silica,	42.24	67.0
Lime,	12.24	trace.
Magnesia,	13.74	3.9
Protoxide of iron,	14.59	8.6
Protoxide of manganese,	0.37	
Alumina,	13.92	0.3
Soluble mineral matter,		12.8
Vegetable matter,		3.8
Water,		5.5
	100	100

The difference between the rock and soil is the lesser quantity of lime in the soil, and the presence of minerals which dissolve in water; these are salts of potash, soda, and lime, which, in the large quantity present, make this a remarkably rich soil.

In the neighborhood of granitic rocks, and generally lying on each side of them, are found rocks containing almost the same mineral substances, but disposed differently. They are looked upon as formations derived from the wearing down of the granite by the action of water, which, sifting the materials as they wore them from the side of a hill, and carrying them through a large body of water, deposited them at great depths in the ocean, in a regular order; the heavier particles and minerals falling quickest, and occupying the undermost position, and the lighter materials on the top. Each deposite occurring during a certain time, would have a distinct character either in mineral composition, amount of deposit, or size of the particles deposited, from those of an earlier or a later period. A distinct bed, or stratum, would be formed, and rocks thus formed by deposit out of water, are called stratified or sedimentary rocks. But we have seen that they are deposited under water, at first. How came they to be now dry land? They have undergone a silent upheaval from below, acting gradually, but continually, rendering the water above shallower, until at last they emerge from the deep, covered on their surface with all the sand, clay, and rocks which they may have received while submerged. Such is the island of New York. At one period, it lay under water, as the Banks of Newfoundland now do, and has carried up on its back, the bed of sand with which it was coated below water. We find this sand sprinkled with shells of molluscous salt-water fish, both univalve and bivalve;

some of these exactly resembling those found in the ocean, at moderate depths: this similarity informs us of the origin of the sands of Manhattan and Long Islands.

Some of these water-deposited rocks, especially those of the earliest date, have been, by close proximity to melted rocks, so altered as to become, in a degree, crystalline, at least, they assume a splitting or slaty character, and generally speaking, the lower and older the bed, the better and finer slates will it yield. Those altered or *metamorphic* rocks, as they are technically termed, are gneiss, mica-slate and clay-slate rocks.

Gneiss is a rock having the same minerals as granite, but arranged regularly in layers; thus a layer of quartz, then a layer of felspar, and lastly, one of mica, and so on, repeated through the whole thickness of the rock. It varies in its character in proportion to the quantity of these minerals present, and soils formed from them vary, also, but almost alway resemble granitic soils. They are, however, poorer and yield a scanty herbage, requiring high manuring to yield any profit on farming. Small quantities of manure, added every year, tell better on gneiss soils, than heavy manuring repeated seldom. Gneiss constitutes the surface rock of Manhattan or New-York Island, over nearly its whole extent, a great part of Westchester, and the counties east of the Hudson. A large tract of the Highlands is gneissose, and a great part of Scituate, Coventry, and West Greenwich, in Rhode Island. The Green Mountains, in Vermont, are to a great extent, of gneiss, as is the hilly district on the west of Lake Champlain. Gneiss is found forming the rock and soil of Essex and Clinton counties, in this state, and among the Adirondack Mountains. Soils formed from this rock are found scattered over every primary district in New England.

SUNDRY ITEMS.

To Renovate Old Meadows.—I have lately seen a new mode of renovating old sod-bound pastures and meadows. It is to take a subsoil plow and three horses, (which make the best team,) and plow the field, overturning no furrow, but loosening the earth below, about one foot deep, harrow the same way, sow grass seed, and roll down with a heavy roller. This is the practice of a landlord who prefers grass to any other crop, and the effect is astonishing. I saw a piece that had just been served so. The sward, of course, was broken in streaks, and the grass seed was up most beautifully on these. The unbroken strips had been stretched and moved a little, so as to expose the old roots a little to air and moisture.

To Cure the Sore Necks of Oxen.—A neighbor of mine had a pair of working oxen whose necks became very sore. He covered that part of the yoke resting upon the neck, with sheet lead. They got well almost immediately, though constantly kept at work. I suppose the lead being a good conductor of heat, drew off the inflammation, and thus enabled the sores to heal.

Easy and Rapid Way of Sowing Plaster.—When I sow plaster, instead of setting my men to lugging it upon their backs and necks all day, I take a two-horse wagon, fix a long box across the back part of the wagon, and a seat forward of that, on which a man is seated, riding backwards. Then, with a quarter or half a ton of plaster in, I seat myself in front and drive back and forth, across the field till the load is sown out of the back part of the wagon. In this way, I can sow as fast as four or five men, and with less manual labor. My neighbors laugh at this, as being a lazy way. But I find a neighbor's laugh much easier to bear for a few minutes, than it is to cary a back load of ground stone all day.

Benefit of Guano.—Two years ago, I used half a ton of guano in various ways, some on grass, some on corn, and some in garden. The season was unusually dry, and I saw no effect from it, except in the garden, upon a bed of peppers. These were the largest I ever saw. Last spring, I planted some chicken corn upon this pepper bed, which grew nine or ten feet high, about double the usual height. I regret, now, that I had not procured some more for wheat, last fall. Would it pay to put it on wheat in the spring? [Yes.—Eds.] What would be the effect upon the spring-sown grass seed, while the plants are young and tender? [Very beneficial.—Eds.] I think I used it too sparingly, through fear of injury by excess, and have now a high opinion of it as a manure.

The difficulty with us farmers, is the want of capital, and hence we fear to risk much for expensive manures, lest a failure in the quick returns would put us to inconvenience. Now, if I should use it, or any one else, and raise thirty bushels of wheat per acre, I do not doubt that it would be the cause of using many tons where the article is quite unknown. W.

Dutchess Co., N. Y.

CULTIVATION OF FRUIT ON LONG ISLAND.

Among the various objects that engage the attention of Long-Island farmers, few have higher claims upon their care than the cultivation of good and wholesome fruit. No one, however small a piece of land he may occupy, or however limited his means, should neglect this important branch of husbandry. Hence it is that I think our farmers could not turn their attention to anything more profitable, at the present time, than to the cultivation of fruit. There is no place, perhaps, in the United States, where apples and late peaches would commmand better prices, possessing, as most parts of the island do, an easy and ready access to New York, Boston and other markets. Our soil and climate are well adapted to the growth of excellent fruit, and all that is necessary for its perfection is more interest to be manifested by our farmers in its cultivation.

The usual modes of planting apple orchards here, is to procure seedling trees from a nursery, large enough for standards, set them out at the regular distance, and graft them from 5 to 6 feet above the ground. By this method, I think they

make better tops than when budded in the nursery. I make it a point never to graft, unless I have seen a sample of the fruit of the tree from which the scions have been taken, or at least, that which has been recommended by a friend, or some other reliable authority.

As grafting and budding are very simple operations, a person may learn either with only a few minutes' instruction. All the knowledge I ever gained on the subject was from reading agricultural works.

I think that pruning apple trees in the winter or early in the spring a very bad practice, as it leaves the wound open to the wind and weather, while the sap is in a dormant state, and after it commences its flow, it begins to ooze from the wound and often causes the trees to become diseased, and bring on premature decay. They should not be pruned before June or July, when the sap is up, and as it descends it will heal over the edges of the wounds. One of the greatest errors that farmers commit, is, that they do not prune at all, or at such long intervals as to be under the necessity of taking out large limbs, which require a long time, if ever, to heal. Pruning should be done often, and when the limbs are small. Then the wounds soon heal over, without any injury to the trees.

HAWLEY B. ROGERS.

Long Island, March, 1850.

SILK COCOONS.—Silkworms will have wound their cocoons from the 1st to the 20th of this month. Those you wish to reel, may be left in the hot sun a day or two, or they may be exposed a few hours in an oven or kiln, heated sufficiently warm to cause bees' wax to melt. Those intended to produce eggs for the next crop, must be selected and placed on sheets of moist paper, in a cool, dark room. From 100 to 120 pairs of millers will produce an ounce of eggs. Each female lays from 300 to 500 eggs, averaging about 350. An ounce of eggs contains about 40,000. If well saved from good millers, and safely kept, they will nearly all hatch and produce good worms. Our climate is admirably adapted to the production of the silkworm, as is shown by the fact, that while an average of 30 to 60 per cent. of the worms are lost in Europe, from climate, food, and disease, scarcely five per cent. are lost in this country.

ENGLISH AND AMERICAN HUSBANDRY.

A RECENT number of Blackwood's Magazine contains an article entitled "British Agriculture and Foreign Competition." It gives, among other things, the price of wheat in several countries, the cost of transporting it from those countries to England; and, adding the present nominal duty, the cost price of this foreign grain in the British market. At present rates of rent and present duties, it is contended, English agriculturists cannot compete with these foreign wheat growers. It would be foolish to contend that they can compete with farmers who can purchase equally as good land as much of that in England for the money annually paid in rents and taxes by the English. But the assertion might be ventured that the mode of culture employed in England *may* have more to do with the embarrassment of the English farmers than we or they are perhaps aware.

I do not propose to enter upon a discussion of the principles nor policy of protection, for this would not be an appropriate place for such a discussion; but I must say that, from what few observations I have been able to make on the husbandry of England, I am convinced that the repeal of the corn laws is not the only cause of the present embarrassed situation of the English farmer. If this is so, protective duties are not his only hope and remedy. I have not visited every part of England, nor have I ever examined every implement of agriculture in use there, but from what I have seen, I have not found the mode and manner of tillage there so scientific nor economical as it might be, nor as might reasonably have been expected from the reputation English farmers enjoy as agriculturists.

The article in question contains an estimate of the expense of putting in and harvesting an acre of wheat in the wheat-growing parts of the Mississippi Valley. Including two dollars for plowing, it makes it out at seven dollars. Let us see how the English farmer puts in and harvests his field of wheat.

Not many years ago, I passed the seasons of seed time and harvest in one of the best wheat-growing districts, in Staffordshire, England. I had therefore an opportunity of seeing how these important operations were there performed. I never saw less than three, and many times I saw four and five horses drawing, at a slow pace, a single plow. Most American farmers would have plowed the same land, equally as well, and in half the time, with a pair of horses. But to do so, of course, an American plow also would be necessary. Then two, three, and even four horses were employed to draw a harrow, and frequently have I seen as many as eight drawing a spiked roller. Now these horses are only kept at a great expense, far greater than would be in this country, where provender is less valuable. Let the English farmer, then, either improve his implements of tillage, so that they can be worked with less power, or increase the speed of his horses, so that more can be done in the same time, and an improvement and a gain will be effected, which will, to a certain extent, relieve him from the ruinous effects of the present anti-protection policy. This will most certainly be the result. In America, we have been led into improvements and expedients of every kind to meet the high price of labor, and now we can put in and harvest an acre of wheat for seven dollars. The English will find it necessary to resort to these same improvements and expedients to meet the low prices of which they now so bitterly complain.

But this will be difficult and mortifying to the English, they have such a *notion* of solidity and stability. They seem to have also an extraordinary reverence for certain old customs and

practices. In that part of England referred to, wheat is commonly reaped with the sickle, at an expense of from twelve to fifteen shillings sterling—nearly the half of seven dollars. Oats are mown with a naked scythe, and then "taken out," as it is called by the hands, and so bound into bundles. The scythe and snath resemble those used by us twenty years ago.

I remember having tried to explain the construction and opertion of our grain cradle to one of their farmers. As soon as I had made him understand it was but little more than a simple scythe and snath, *he at once saw what I meant*, and said he would show me one. We repaired to his plow house, and he brought out a very *antique* scythe and snath, the latter armed with a switch or spring, the office of which was to throw the grain round, as the scythe cut it. This was the only grain cradle he had ever seen!

If what I have said is over-drawn, that is, if I have endeavored to put American husbandry above that of England, I am misunderstood. If we excel the English in any of our labor-saving machines and implements, it is, without doubt, because we have been constrained to it by the low price of produce and the high price of labor in this country. As I said before, to meet the reduced prices of corn in England, her agriculturists will have to adopt the same expedients. But this will not mend the matter entirely. Present rents are too high for present prices.

Cayuga, N.Y., April 10th, 1850. EGREC.

CULTIVATION OF TIMBER.

TWENTY years ago, our county could boast of large forests of as fine ship timber as could be found elsewhere. Indeed, it is a good recommendation to a ship, to say that she was built of Delaware white oak. As fine black oaks, also, as the country can produce, are found in this state. Nevertheless, they have fallen before the axe of the woodman, until we have in many cases to depend on Maryland and New Jersey for rails to keep up the fences of our farms. In view of these facts, I propose making a few remarks on the cultivation of timber to supply, as far as practicable, the deficiency, hoping thereby to induce some one to try to make two trees grow where only one grew before.

In 1839, I bought the property where I now reside, at which time it was destitute of timber, either for rails or fuel, and there was not rail timber enough on the farm to fence one field. In the fall of that year, I bought about half a bushel of chestnuts, mixed them with a portion of earth, put them in a box, and left them out exposed to the winter, which was unusually warm, and many of the nuts sprouted before I was aware of it. I planted them where I intended them to grow, in February, 1840. The spring was unfavorable to their vegetating; nevertheless, after the crows, mice, and ground squirrels got their share, I have about 1,000 left, many of them fine, thrifty trees, between 30 and 40 feet high, and 18 or 20 inches in circumference, which I would not have dug, or grubbed up, for a dollar each. These will soon do to cut, and the stumps will be worth more afterwards than the tree was before, as it is allowed that one good stump will produce a rail for each year, letting them remain ten or twelve years before cutting again. So, if I can get a few hundred trees a growing, I may keep myself and posterity in rails for some years to come. Besides, they will thrive on the banks of creeks, gullies, or waste places, where nothing else valuable will grow. I find that they will grow anywhere that pine will thrive; but I believe that a sandy loam is best adapted to them. So much for chestnut.

Pine would next seem to claim attention, as a substitute for fuel, being the most convenient and productive, especially on worn-out land.

In February, 1840, I sowed a few quarts of long-leaved pine seed, costing $1 per quart, on a rough sedge field, or patch, without any preparation whatever. Sedge sward is better than clean land. I have now several acres of these trees well set, from 30 to 40 feet high, and some of them 30 inches in circumference. They have commenced seeding, and should I commence cutting to-morrow, I should have no fear of a constant supply of fuel; and that, too, from land too poor to pay for cultivation; indeed, not worth keeping under fence for any other purpose. There are many groves of pine in this county, all, or nearly all of which have been sown by the present generation. An old gentleman of my acquaintance sowed a lot in pine after he was forty years old, and lived to build a house from the timber. Although I may not live to reap the fruits of my labor, is it not a duty to sow and plant for posterity, and try to leave the world the better for having lived in it?

Kent County, Del. April, 1850. C.

WISCONSIN FARMING.

THIS and the adjoining counties are fast filling up with imigrants. There are no government lands for some miles round this fountain city (Fon-du-lac); they are principally in the hands of actual settlers, who are mostly New-Englanders and New-Yorkers. The climate is beautiful, and the country exceedingly healthy. We were plowing until the 10th of December. Wheat does remarkably well here, yielding from 25 to 35 bushels per acre, under very poor cultivation. There is a great demand for all surplus produce, which is principally taken north. Wheat is now worth 60 cents per bushel, corn 50, oats 28, potatoes 31, flour $4 per barrel, butter 18*d.* per lb. Limestone abounds in this region.

This village, which, five years ago, consisted of one log house, now contains over 2,000 inhabitants, is more than amply supplied with stores, and has six large hotels, some of them as good as can be found in the west. We have the telegraph in operation here also. There are extensive iron works at Mayville, 20 mile southwest of Fond-du-lac, which are able to supply an almost unlimited demand with pig iron and castings of superior quality. Our winters here are not so severe as might be expected from the latitude. There is just about enough of timber

in this region for all useful purposes; the country is well divided between timber and prairie, so that most farmers have part of each. Stock can be raised very cheap, and always bring a good price.

The lovers of Flora would find this an ample field for study from April until November, as the prairies are literally covered with flowers all that time. The first we have is phlox, of three varieties, none of which I have ever seen cultivated in any of the eastern gardens. They are all of low growth; the colors blue, white, and pink. The former is indigenous in the woods, the two latter in the prairies. Next comes the Dodecatheon meadia, or American cowslip, which, for quantity and beauty, exceeds belief. They are succeeded by taller-growing plants. Conspicuous among them I would mention the Bablisia alba, and last in the season, the Liatris scariosa, which keeps in flower until the frost comes, and is remarkable for opening then first at the top of the stalks.

Can you or any of your readers give a description of an instrument for taking the height of trees while standing, I think I have seen an account of one many years ago in Loudon's Magazine.

Will wheat degenerate on the same farm if the ground is kept in good condition? [No.—Eds.] Mine is a very superior kind, and I do not wish to change it. I have grown it four years, and my crops get larger every year, the berry being now as good as the seed I first procured. I hope some person will be able to step into Reviewer's shoes, as his criticisms are always to the point.

Fond-du-lac, Wisconsin, Jan., 1850. S. S.

EXPERIMENTS IN AGRICULTURE.

The value of an agricultural journal depends upon the number of experiments connected with farming business, judiciously made, and fully detailed, which it makes known to the agricultural world. We go to books, usually, for abstract learning, but the common routine of practice may be picked up anywhere. We want to know through periodicals, current facts—what improvements have been attempted—how they have been attempted, and with what success—good or ill; for it is just as important to know what has failed as what has succeeded, and in general more important. Saving is gaining. We may be able to gain by few of the operations that have been profitable to others, since a thousand causes may prevent our even trying to do so. But there are few failures, the knowledge of which would not, in some way, serve and benefit us. Now, nearly every farmer is experimenting, more or less, all the time. How few of them let us know anything about these experiments. Failures are always kept profoundly secret; and as success rarely equals expectation, that is seldom deemed worthy of being made public. For the most part, the accounts we have of experiments, are from persons, who, having undertaken something new and important to themselves, cannot restrain their desire to talk about it. They rush into the journals, sometimes at the first heat, when they have only conceived the thing, and before they have begun to work. In general, however, something has been done, and high hopes are entertained. We then hear of the beginning, and the brilliant prospects, and, nine times in ten, we never hear of the matter again. It fails—of course we are not told, though I think the experimenter is under solemn obligations to do it. It succeeds partially, and is not thought worth saying more about. It succeeds entirely, but the novelty is gone; it has become an old thing, and the experimenter is looking forward to something else. How many half-told experiments lie buried, Mr. Editor, in your past volumes!

But the worst is, that where even sensible farmers undertake to give accounts of valuable experiments and improvements, they seldom do so in a way to be understood to any useful extent, at a distance. Few appreciate all the particulars that go to constitute an experiment, every one of which must be accurately detailed to enable another to profit by it. Now let us consider a moment as to experiments in growing crops. First, we must know what kind of land the crop is grown on. Nothing can be more unsatisfactory than to say, it is clay or sand, or even heavy clay or loamy sand. To arrive at certainty, we ought to have an analysis of it. At least, we should be told as nearly as can be described, the precise nature of both the soil and subsoil. Then we should know what is its geological character—what rocks, if any, exist in the neighborhood, and as near as may be, its longitude and latitude, for climate and position are of vast importance. We should also know the previous history of the land, and its treatment for many years before. If manure is used, we should know the ingredients and value of that, the time and manner of applying it, and the precise quantity in bushels, cords, or tons. When I come to so many "loads" of manure used in an experiment, I stop reading and pass on to the next article. My loads of manure vary from ten bushels to a hundred, and I have no idea of a load of itself.

Next, we must know something of the seed used. There are 100 varieties of wheat, and 150 of potatoes and perhaps as many of corn. The variety planted, is important. How often, how deep, and at what times the land was broken and the crop plowed must be stated. When the ground was seeded—how deep, how covered—when it came up—how much rain and drouth it encountered; all these must be known. And lastly, the amount of production must be stated in exact weight or measure, or both. All these particulars, and many I have not enumerated, are indispensable to be known, that one farmer may profit by the experiments of another, a hundred, or even twenty miles distant. Yet how seldom are they given. How seldom does the experimenter himself know, or keep any accurate account of these things. And here is the secret of the slow progress of agricultural improvement. Not one farmer in a thousand knows half the time, what he himself is doing. For the want of knowledge, of close observation and accurate registering of details, he is

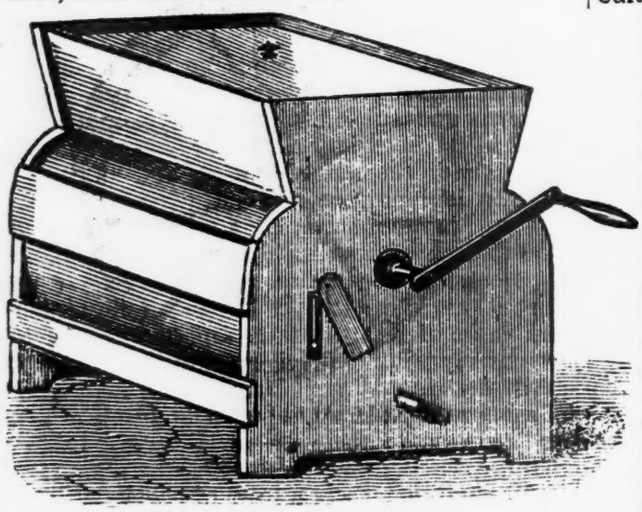
forever attributing effects to wrong causes, and goes blundering on, blindly groping his way year after year, and if he writes for the journals, leading others astray. And this has been repeated so often, that it is not to be wondered at, that book farming is held in contempt.

COKE.

THERMOMETER CHURN.

THIS churn is so constructed that the cream or milk is readily brought to the desired temperature without mixing with water, and the temperature definitely determined, which is of great advantage in making butter.

One improvement consists in the construction of a double bottom, made in the form of a semicircle, of two sheets of zinc, or other metal, placed one above the other, the cream being contained in the uppermost. Between the two sheets forming the bottoms, is a space, or chamber, into which may be introduced cold or warm water as may be required, to increase or diminish the temperature of the cream or milk. The water is easily applied by means of a common tin tunnel, through an aperture, or hole, in the side of the churn.



THERMOMETER CHURN.—FIG. 51.

Another improvement is a thermometer permanently placed in one end of the churn, entirely secure from breaking or accident, marked at 62°, and which is always visible, so that the operator may know when the cream or milk is brought to the proper temperature. If the cream or milk is too warm, the mercury in the thermometer will rise above the mark of 62°, and cold water should be applied in the chamber described; if too cold, the mercury will fall below the mark, when warm water must be used. The cream or milk should be stirred by the crank, while the water is being introduced, to give the cream or milk an equal temperature throughout. When the thermometer indicates that the cream or milk is of the proper temperature, the water may be drawn out through the tube placed for the purpose, when the churning should be performed by giving the crank about forty revolutions to the minute. By reversing the motion of the crank, it is liberated, when both it and the dasher, or floats, are drawn out.

CULTIVATION OF POTATOES.

AFTER numerous trials, I have come to the conclusion, that, for the soils generally cultivated in Massachusetts, and best adapted to raising the potato, plowing in spring is preferable, in depth not less than 8 or 10 inches, spread with 20 loads of good compost manure to the acre, (high manuring invaribly increasing the rot,) well mixed with the soil by harrowing or plowing to the depth of 3 or 4 inches. Plant as early as possible, running a furrow 6 or 7 inches in depth, the distance to suit the cultivator, say from 3 to 3½ feet between rows; then take large potatoes, (in these times of scarcity they may be cut,) making two hills. I consider half a large potato preferable to any number of small ones for seeding; they throw stronger shoots, and come forward earlier (I wish to be understood that this includes only the round varieties); place them 2½ feet apart, with the cut side down; then, with a small shovel for the purpose, drop immediately on the potato half a pint, more or less, of ashes, leached or unleached; then cover with fine soil 3 inches; when at the height of three or more inches, cultivate or harrow, (not plow,) and hoe, leaving the surface level, taking care to pull from each hill all but three of the strongest shoots. In after hoeings, which should be two or more, small hills may be raised. Now for the result. By planting deep in the soil, the young tubers do not heat by the sun, as when growing on a level with the surface, which I consider one cause of rot; the ashes affords potash to the plant, of which it requires considerable quantity, also are a good remedy for the ravages of the wire worm; reducing the tops to two or three in number, the stalk grows thicker and stronger, and in case of disease, is less liable to become affected at the root; and on repeated experiments, I have invariably found as many bushels, with three fourths less "small potatoes," than where from five to eight sprouts were suffered to grow.

Now for the long varieties, such as long reds, ladies' fingers, long black Mercer, &c., from repeated trials, year after year in planting larger potatoes, whole, or split lengthwise, one half in a hill, or cut crosswise in the centre, with seed end, no perceptible difference, but with the stem end I have always obtained more bushels of a uniform and large size than from any other manner of seeding. In experiments to prevent the rot, I have found that deep plowing, dry land, light manuring, early, deep planting, ashing, with good tilling, and early harvesting, generally secures a middling crop of sound potatoes. Cutting the tops, if done immediately on the first appearance of the purple tinge upon the leaf, will secure the root from rot, but they will not grow afterwards; if they are small and green they remain so. I have dug early-planted potatoes when nearly grown, on the first appearance of the disease, scooping a hollow in the field, turning in half a bushel, burying them four inches in a conical form, diging a trench around each hill to convey the rains from them; let

them remain until freezing nights, then housed without the least sign of disease ever affecting them, when part of the same field, left and harvested at the usual season, was badly affected. C. S.

ALUE OF SEAWEED AS A FERTILISER.

Mr. Chamberlain, cashier of the Farmer's Bank of Virginia, at Norfolk, is one of that class called "fancy farmers," by another and more numerous class, who never had a fancy to do anything different from what their fathers did before them; and who complain of "worn-out land," and talk of emigrating because they cannot make a living upon such a poor soil; and yet neglect to use one of the most valuable manures which Providence in its bounty sends to their very doors, because "they reckon if it was of any account, daddy would have used it;" and as he did not for years and years, they must not, until at last some one whom they ridicule as an "experimenter," happens to prove to them that it is beyond dispute one of the best and cheapest fertilisers which can be used upon tide-water farms.

To prove this fact, Mr. C., when engaged in cultivating a small farm a few years ago, instituted the following experiments:—He laid off nine beds seven yards square, containing each the one hundredth of an acre, dividing them with pine poles. These were manured and spaded up, turning under the manure, and each sowed with one pound of oats, which would be at the rate of three bushels to the acre, and one ounce of clover seed, which would be at the rate of six and a fourth pounds to the acre. The oats, when ripe, were cut, cured, and weighed upon the spot, and resulted as follows:—

No. 1. Without manure. Crop, 10 lbs., or 1,000 lbs. to the acre.

No. 2. One horse-cart load of seaweed, or "sea ore," gathered from the beach and spread immediately upon the land and spaded under. Crop, 47 lbs. An increase of three and seven tenths for the seaweed.

No. 3. One load of same and half bushel shell lime, fresh burned. Crop, 43 lbs.

No. 4. Same and one bushel lime. Crop, 41 lbs.

No. 5. Same and two bushels lime. Crop, not weighed, injured by cows, but not so good as preceeding one.

No. 6. One load same, reduced to ashes, making about a barrelful. Crop, 15 lbs.

No. 7. One barrel of leached ashes, cost 25 cents at soap works, and hauling. Crop, 30 lbs.

No. 8. One barrel unleached ashes, worth 25 cents. Crop, 47½ lbs.

No. 9. One horse-cart load of good stable manure. Crop, 30 lbs.

Thus it will be seen that the fresh seaweed was more than 50 per cent. better than stable manure, and more than 200 per cent. better than the ashes of the weed when dried and burnt; that lime was a detriment, and the greater the quantity, the worse the result; and that nothing tried was equal to the seaweed, except the fresh ashes from the house, and that plot gave a slight increase over the seaweed, and more than 50 per cent. better than the leached ashes. It was a sandy soil, and, as the crop without manure proves, it was naturally very unproductive. The difference in the growth of the clover afterwards was in a corresponding proportion to the oat crop. Such experiments upon a more extended scale, are just what the world wants, and just such as we should like to have our friends furnish us, in order to make them known to those who read the Agriculturist.

WELL WHEEL.

This is a cheap fixture with a rope to raise water from wells, and is admirably adapted for raising and lowering light weights about stores and warehouses, as it works with much ease and expedition.

Well Wheel.—Fig. 52.

MANURES.—No. 1.

Manures are such substances as tend to fertilise the soil, and fit it to support an increased vegetation. They are not only the food of vegetables, but in their modern sense, they include all materials whose incorporation with the soil, aid in its melioration, or in developing the vegetable food they contain, and fitting it for assimilation by the growing plant. It includes such, also, as abstract it from the air, rains, dews, and snows, and hoard it up for the use of crops.

The first embrace all animal and vegetable matter, and ashes—every particle of them—for they have once constituted parts of vegetable structures, and will again, whenever exposed, to be taken up by plants, under all the conditions necessary for their absorption. They also include water, atmospheric air, and many of the salts and gases, which may have been dissolved, and are now contained in water, or are mingled with the air. The latter include lime, plaster, salt, and other mineral manures, charcoal, and soot, all of which furnish some food to the plant, but whose beneficial action in the soil is mainly due to the mechanical alteration they effect in

such as require it, (as sands, clays, and peat,) or that are useful as absorbents of ammonia, and other fertilising gases abounding in the air. Each of these, and some others, when incorporated in the soil, act in this way, and draw large quantities of vegetable food from the air and rains.

In enumerating the various kinds of mineral, vegetable, animal, liquid and gaseous manures and their application, we shall go over a wide circle of practical information, but in a somewhat discursive way; for it will matter little to the farmer, what may be the order of his information, if he but secure it.

Manures, when judiciously applied, are the great sources of agricultural wealth. They beautify our fields with their rich harvests; they fill our barns and granaries with food, and our yards and stalls, with well-fattened flocks and herds; they load our tables with every substantial viand and grateful delicacy; they clothe us and our children with the healthful and graceful fabrics we derive from our wool, flax, and hemp, our cotton, or our cocoons; they yield us a sheltering roof and walls from the summer's heat and winter's cold; and they aid us, finally, by their remunerating returns, in providing every requisite for rational pleasure and enjoyment. Homely, or otherwise uninviting as the subject may appear to the novice or superficial observer, the reflecting and intelligent will not only regard it with the deepest interest, but will aid us, also, by every means within their own observation or experience, in fully setting forth this foundation for the farmer's hopes and success.

Marsh Mud.—In commencing this subject, we shall most appropriately begin with the fertilising materials, which lie in such profusion at our docks and pier heads, and wherever there is a salt-water eddy in the neighborhood of this great metropolis. The amount of fertilising matter carried away from this city by drains, or washed down the gutters into the adjacent waters, is sufficient to fertilise 200,000 acres annually. This is spurted into the docks, where the soluble matters are speedily dissolved, and with the floating particles wafted into the wide ocean. The heavier portions alone subside, and these furnish a rich bed for the support of innumerable forms of minute insects, worms, muscles, and animalculæ. Here they find stores of rich food. Here they propogate and perish; and these vast accumulations of matter, that might have clothed the fields with verdure, serve only to minister to a comparatively worthless, or superfluous, subaqueous vegetable and animal life. A small part, only, comes back to the land as seaweed, and kelp, oysters, and other shell fish, or from a few of the countless variety of the finny tribes. All else is carried hopelessly beyond the reach of man, and distributed wherever the tides ebb and flow.

Besides the accumulations of marsh mud from the waste of man, there are large deposites wherever the outlets of fresh-water rivers meet the ocean level. These water courses carry with them, during the periods of freshets, large quantities of vegetable and other manures, which are deposited when the current subsides. These deposites are sometimes so extensive, as to form large islands, and wide-spread deltas at the mouths of the rivers, such as the Ganges, the Nile, and the Mississippi. Where the rivers are not of sufficient size to furnish large accumulations of alluvion, or it is washed into some of the great ocean currents that float past them, these deposites may be found in the bays or eddys adjacent to the confluent waters, or remote from them, and may there be frequently secured at low tides, for the farmer's use.

There is scarcely any manure better fitted for general crops, than this sea mud. Besides the original manure which formed so large a portion of them, they contain large quantities of the remains of animal life, since reared and deposited in them; and the salt they have absorbed, is an additional and most valuable ingredient for the muck heap. We shall continue this subject in our next.

POULTRY RAISING.—No. 2.

Of the numerous varieties of barnyard fowls now existing in this country, it is difficult to say positively, what breed is the best, as a matter of profit in eggs and chickens. There are almost as many opinions as there are varieties. I think the crosses of the Poland cock with the pure Dominique hens, as I stated in the March number, are the best for laying, if not for breeding for market.

The great question is, How many eggs can be obtained from a given number of hens? I mean, by the best possible management, of course. I answer not over *seventy-five or eighty* per fowl, at most, during the year. It matters not what has been done in certain peculiar cases. I say, as a "fixed fact," that no man will ever succeed in obtaining a larger number from any breed, taking a series of years together. I would say that one hundred hens will produce 7,500 eggs in a year, as the maximum of laying with large numbers. These are worth $75, or one cent each. It will cost from $40 to $50 to feed them, to say nothing of the expense of about ten cocks. A fowl will consume one gill per day of grain, at least. I estimate one bushel a-year for each fowl. Corn and oats are as good and as cheap food as can be given them, if you purchase their food; and this estimate is based upon such a supposition. Therefore, we must have 110 bushels for one hundred hens and ten cocks—say half of each. Corn is worth 60 cents a bushel, and oats 40 cents in the vicinity of New York, at which place I consider the eggs worth one cent each. How will the account stand? The expense is $50.

The next point is, how many of these one hundred and ten fowls will probably die during the season? If I say ten per cent., you will think I am beside myself; but I do say *ten per cent.* will be the mortality among them. When one fowl dies out of ten in a season, and no more than ten are kept, we consider it a small loss, and hardly notice it. Who does not lose one in ten on an average? This is *practice*, not

theory. You all find it thus, and you will to the end of time. Eleven fowls are worth $2.75, which we add to $50, making $52.75, the cost of the ninety-nine remaining fowls. I have reckoned one bushel per head as originally counting, making no abatement for mortality.

The next point is, the worth of the time in feeding and attending to them, breakage of eggs, and interest on the investment. It is truly said that "time is money." Hence let no one say, "O, it costs nothing, we do it in the family, when we should not be doing anything else." For this part, $10 is little enough. We now have $12.25 as the profit on one hundred and ten fowls. This is small; but the large "egg" and "chicken" stories are not to be taken as a safe criterion to go by.

I have allowed nothing for chickens. I do not let my hens sit at all in the above account, but test their laying powers only. We'll see about the chicks next time. It is true, those ten cocks were of no use at all, but who would dare keep one hundred hens for profit, without them? I will relate my experience in keeping fowls without the males, by-and-by.

Now, the great profits in keeping poultry are not what they are "cracked up to be." I have had enough of it to last a while. As to keeping a very large number of fowls by one person in one enclosure, it is a precarious business. No man should ever think of making a living by it, unless he owns a farm, and that farm is situated where the expense of getting his produce to market is considerable; but enough for the present. A fortune can be made on poultry, but not as managed now-a-days.

T. B. Miner.

Clinton, Oneida Co., N. Y.

UNDERDRAINING CLAY SOILS AND SUCH OTHERS AS ARE NATURALLY MOIST, OR RETENTIVE OF WATER.

We believe no journal in the country has more frequently nor earnestly advocated the thorough underdraining of all such lands as require it, than our own. Every additional fact coming under our notice serves to confirm us, not only in the importance, but in the absolute necessity of the adoption of this system to render the cultivation of such lands profitable.

We have, for instance, a piece of land, that, owing to the excess of moisture, held in the soil, is not in condition to be broken up, till quite too late for planting or sowing; and when subjected to the plow, is turned up in such ponderous clods, as to be almost wholly unfit for the purpose of cultivation. These lumps require weeks, and sometimes months of exposure to the atmosphere, before they crumble down into fine soil, capable of admitting the roots of plants and ministering fully to their support. Every rain that falls, instead of percolating rapidly through the soil to the underdrains, thus imparting to it the warmth and vegetable food contained in the rain water, and then hurrying away to permit the genial air to follow and yield up its warmth and food for the same beneficent purpose, is held by the tenacious earth, to the great injury, or almost total destruction of the crop. The result to the occupant is, hard work and meagre returns—investment of capital, seed, and labor, and no adequate remuneration.

When, however, this land is once thoroughly underdrained, the change is as striking as if one had moved into another latitude, or into a foreign and more favored country. The water, before perpetually resting in the soil, and brought to it in such quantities, by our abundant rains, is silently, though surely and rapidly drawn away, leaving the soil dry, mellow, and warm, and ready to receive the plow and the seed at the earliest return of spring. Its fine condition gives instant and vigorous growth to the plants, and every successive rain, no matter how profuse or frequent, adds to their supply of food, and the means for their development and progress towards maturity. The water does not now remain and stagnate on the surface, nor form a mortar bed for a foot below it. It sinks immediately through every successive layer of roots, and, after yielding all the nutriment it is capable of affording to them and to the soil, the now superfluous and even detrimental water is filtered into the drains, and passes away from the field.

And when these profuse rains are succeeded by long and parching drouths, as they not unfrequently are, the drained land is not the less prepared to resist their deleterious effects. The depth of soil greatly increased, from thorough drainage, facilitates the upwelling moisture from remote depths below the surface, which impart their nourishment to the roots as they ascend. This moisture, too, is frequently saturated with some one or more of the mineral salts, as lime, plaster, potash, soda, and the like, which adds to the food of the crop, and imparts a permanent fertility to the soil. And still more advantageous is the fine pulverisation of the earth *which the elements effect* in the soil, where thorough drainage has been allowed to do its perfect work. The earth will be found to have become porous, loose, and friable. There is a telegraphic communication established, not only between the surface and the remotest depths of the soil, but even between the air above, and the air below it, which circulates through the drains. This is literally true, for the soil is now in condition to permit, and even invite and favor those electrical operations and changes in the soil, which stimulate the plants and hasten and augment their development. Each of the underdrains are tunnels, through which the air is constantly passing; and at no period of the year is the atmosphere so loaded with moisture, as during midsummer, when drouths most frequently prevail. It is thus capable of yielding the largest quantity to the soil, in its passage through it, a result which is found to follow, wherever deep draining and subsoil plowing are practised. When surrounding, undrained, shallow-plowed fields are parched with drouth, such adjoining ones as have been properly treated, are found almost saturated with a wholesome moisture; and the crops upon them, under the double advantages of heat, and sufficient

moisture, are stretching away to the fullest perfection of their stature. The difference in the average annual value of crops, raised on drained and undrained fields, is frequently *five to one;* and wherever their natural condition is such as imperatively to require drainage, it is seldom less than two to one.

The expense of this operation may, at first sight, seem too great to admit of its adoption in this country, where land is so abundant, and labor so dear. And so it is, wherever land is so cheap that the current value of three or four acres, is only the cost of draining one. But if the same quantity of produce can be raised from one acre that is well drained, that is yielded by two acres of similar land, undrained, we have the same money received from the one acre as the two; and we have it, too, at a much less cost; for in the last, we have spent twice the labor in preparing, planting, cultivating, and harvesting, and often more—twice the seed, twice the manure, twice the fencing, and twice the taxes. All these expenses may, and frequently do, on unprepared land, much exceed the value of the crop, while such as has been thoroughly drained, seldom fail to yield the most satisfactory returns. Thus, one man may be annually growing poorer by his work, while another, more intelligent, considerate, and enterprising, may be growing rich. We were about to assert, that it is better to sell one half the land required to be drained, and with the proceeds, drain the remainder; but a moment's reflection assures us that a man had better give away one half, and find means to drain what is left, than go on in the untidy, thriftless, wasteful system of neglect, pursued by too many.

The expense of thorough underdraining in England, a few years since, was from £7 to £10, or even £12 per acre; but, owing to recent improvements and facilities in the mode of doing it, and procuring materials, the cost is reduced to about £4 or £5, ($20 to $25,) a point beyond which, it would seem scarcely to admit of being lessened; though a recent intelligent writer thinks an implement can be made that will accomplish the excavation, for ¼*d.* per yard that now costs ¾*d.* We have but to procure machines for making the pipe tile, and provide the proper implements for excavation, when we can accomplish the same object, as cheaply as it is now done abroad. The difference in labor is all that we have to overcome for this purpose, and this may be nearly balanced by the adoption of some machinery not used elsewhere; and by the advantage our drier, hotter climate affords us, of efficient draining, although drains should be placed further apart. We think, at the utmost, we need not add more than 20 to 30 per cent. to the English prices. This may make the cost of draining, from $25 to $35 per acre—possibly, in some instances, $40. If the result should prove that we can double the crop on such fields, there are millions of acres of land in this country, that will this moment justify the adoption of a system of thorough underdraining; and money, talents, and labor will be vastly more profitably invested in this way, than in the insane investments of life, health, capital, everything, daily and profusely made in California, and similar enterprises.

With these manifest advantages, which commend themselves, at a glance, to every intelligent mind, and which are felt and acknowledged by many of our most enlightened agriculturists, why is not the system at once introduced and generally adopted? The answer may be readily found, in the unwillingness of the human mind, to deviate from the beaten track, want of capital, want of tools, and want of encouragement and example. Even in England, after 50 years' practice, in limited sections of the kingdom, the system required the encouragement of parliament. This was afforded by the loan of $10,000,000, in moderate sums, to such landlords and tenants as chose to accept the offer, on condition of an annual repayment to the government, of 6½ per cent. on the amount borrowed, for 22 years, which fully discharged both principal and interest. Parliament has further and indefinitely augmented this fund, by enacting "The Private Money Drainage Act," which gives equal encouragement and security to the capitalist, and facility and advantage to the tiller of the soil, to secure to himself all the advantages of the system, at the smallest inconvenience and expense. How beneficent and politic was this act, and how greatly does it reflect the sterling sense and patriotism of its legislators, in comparison with the paltry, mousing policy of our state, and general legislation on similar subjects!

In the absence, however, of all anticipated legislative aid, we are happy to be able to record the fact, that the system has already been commenced at various and remote points in the country, by individual enterprise, and its advantages must soon commend it to a wide-spread and general acceptance. We had hoped to enter with some minuteness into the various plans and modes adopted, but our present limits forbid, and we can only hope to recur to it again hereafter.

We will add, for the guidance of such as may be inclined to import a machine for making drainage pipes, that of all the machines for this purpose, exhibited at Norwich, England, in 1849, Whitehead's stood decidedly first, and was awarded the highest premium. This machine was worked by two men and a boy, and turned out in five minutes 185 pipes, 13½ inches long by two inches diameter. Its cost is £23 in England, or less than $100.

GAPES IN CHICKENS.

About a year ago, a correspondent of the Dollar Newspaper published an article on the above-named disease, and tried to prove, (and no doubt believed,) it to be dyspepsia. He said that a brood of chickens, hatched and reared about an old out building, was all healthy and free from gapes, while those raised in the neighborhood of the dwelling or dunghill, were nearly all affected with that disease. I have raised some thousands of chickens, and in different places. My experience is that they are not lia-

ble to gapes about a new building, especially on newly-cleared land. There is something about fresh land congenial to the health of poultry. I have thought it might be animal food in the shape of insects, &c., or that it might be rotten wood. Be this as it may, I am fully satisfied that the disease is not dyspepsia, from the fact that I have seen it cured in five minutes. At the house of an acquaintance, in a village a short distance from my residence, when a chicken, nearly as large as a robin, was sent in from a neighbor, in the last stage of the gapes. I asked the lady if she could cure it. She said she had cured many, but that looked like a hopeless case. However, she would try. She took the chicken in her lap, drew a feather from its wing, stripped it to within about half an inch of the point, turned the chicken on its back, with one portion of the bill between her thumb and finger, while a little girl held the other; she then run the feather down its throat and gave it a quick twist and jerk, and drew out a red, wiry worm about an inch long. The poor thing seemed nearly exhausted, but in less than a minute, it gave a kind of cough or two, and discharged a small quantity of blood, and in five minutes was eating, and to all appearance, perfectly restored. Several others of my acquaintance practise the same mode with success.

This is the disease, and one of the remedies; but what should cause it in one locality and not in another, is more than I can divine. Lime water, and coarsely-ground corn are considered by some persons, as a partial preventive.

Kent County, Del., April, 1850. C.

VALUE AND DURABILITY OF PERUVIAN GUANO.

MOST farmers who have not fully tested the value of guano, as a manure, doubt the continuance of its effects much beyond the first season. All seem willing to admit its great superiority over every other purchasable manure, an opinion that will be fully corroborated by both the following experiments, which have the endorsement of the Royal Agricultural Society of England, for their correctness. The first, while showing an increase of crop for the first year, of 80 per cent. over two other manures, and of 200 per cent. over two others, gave an increase of crop over the average of the other manures of 53 per cent. the second, and more than 28 per cent. the third year after application, all the manures costing the same price. The result might not have been so much in favor of the guano for the second and third years, had farmyard manure been used; but it is perfectly conclusive as to the durability of the guano, beyond even the second year. I hope we may have, to record, ere long, some reliable experiments from our own farmers on this important subject.

The field on which the first experiment was made, was an acre of inferior pasture land, in Stover Park. in the years 1847, 1848, and 1849. It is of uniform quality, the soil being a light, sandy loam, a few inches in depth, incumbent on a stratum of white clay.

The land underwent thorough draining, in 1844, prior to which, it would not produce a rent of more than 5*s.* an acre.

No manures were applied to the land in 1848 nor 1849.

The object sought to be attained by extending the experiment over a period of three years, was to test the *durability* of the different manures.

No.	Manures applied in 1847.	Weight of hay cut in 1847.	Weight of hay cut in 1848.	Weight of hay cut in 1849.	Cost of the Manures
		lbs.	lbs.	lbs.	£. *s.* *d.*
1	Six cubic yards of mud mixed with six cwt. of salt	312	327	613	0 14 0
2	Six cubic yards of mud mixed with 1½ hogsheads of lime	353	337	538	0 13 6
3	Six cubic yards of mud mixed with three bushels of bonedust	511	419	670	0 14 3
4	Three cubic yards of mud mixed with three cubic yards of tanyard refuse..	524	354	558	0 14 0
5	Six cubic yards of mud mixed with 90 lbs. of Peruvian guano	930	550	725	0 14 0

N. B. The after grass, in 1847, was stocked with sheep, but in 1848, it was left unconsumed, one fifth of an acre only, being appropriated to each manure.

The manures, when mixed with a small quantity of fine earth, were applied broadcast in No, 2, March 29th 1849, and during rainy weather which prevailed at the time.

The field is of a fair average quality, and was formerly used as tillage land, but has been in pasture for many years.

The crops were mown June 22nd, and the herbage, produced by the different manures, was of a superior quality.

No.	Manures applied.	Quantity applied per acre.	Weight of hay cut.	Weight cut per acre.	Cost of the Manures per acre.
		cwt.	lbs.		£. *s.* *d.*
1	None.....		401	1,604	
2	Superphosphate of lime	9	616	2,460	3 12 0
3	Nitrate of soda.....	4	706	2,824	3 12 0
4	Peruvian guano.....	6	1,210	4,840	3 12 0

PROFITABLE DOGS.

I SEE you ask for the profit of dogs. Here it is. I work 37 field hands, and nine women out doors, and I keep about half as many dogs. I don't know which earn the most, niggers or dogs, (as I come out about squar at the end of the year,) but I do know that I ain't troubled with my neighbors' sheep as I once was; for you must know I would go as far out of my way to kick a sheep, as John Randolph, and the dogs, I reckon, will go fifty times as far to kill one. The only real trouble I have had, was, when my big mastiff, *Grizzly Barr*, I paid $75 for, run mad, and bit nine of my blood and fox hounds, that cost me nigh on $500, three bull dogs, and four of my best field hands, I had refused $750 apiece for. But I consider everybody must make some sacrifice for his country and humanity, as our Arkansas boys did when they left their diggins to lick the Mexicans. So I conclude I won't care. BOB BLUFF.

Catamount Hollar, Arkansas, May, 1850.

EXPERIMENTS WITH RUTA BAGAS.

Last fall, I gathered from one and a half acres 1,200 bushels of ruta bagas, and the whole cost, when in the cellar, was two cents per bushel. The season was particularly unfavorable to their growth, as the dry weather set in as soon as they were out of the ground, and continued for six weeks. At the end of that time, they looked so badly, that I did not expect to have 200 bushels; but the weather grew more favorable, and gave me the above yield, which I have been feeding out this winter to sheep, milch cows, fat cattle, and breeding sows, to my satisfaction, as to their great value for feeding this kind of stock.

I am convinced that I can winter sheep better with half the cost on hay and ruta bagas, than on hay and grain. Sows, intended for rearing pigs, will do better on ruta bagas and a little grain, than when fed entirely on grain.

I also proved by experiment, this winter, that fat cattle will grow faster on eight quarts of grain and one bushel of ruta bagas, than on sixteen quarts of grain and no ruta bagas. Milch cows, when fed regularly on good sound ruta bagas, give large quantities of milk and butter; and when they have been fed for eight days, there cannot be discovered any taste of the root neither in the milk nor butter. Our butter made this winter on hay and ruta bagas, is as good flavored and nearly as yellow as that made in June. In my opinion, this crop is one of the most profitable that a stock farmer can raise.

Valentine Hallock.

Northeast Centre, N. Y., April, 1850.

AGRICULTURE IN NEW HAMPSHIRE.

New Hampshire is more famous for its granite foundation, beautiful and sublime lake and mountain scenery, than for any remarkable fertility of soil, or exuberance of vegetable products. Thousands upon thousands are attracted hither annually; but it is more to view our beautiful sheets of water, upheaved masses of granite, and to be regaled by our delicious mountain air, than to witness extended fields of waving grain, or the numerous other products, which other regions produce almost in spontaneous perfection. The stranger loves to indulge in his merry jokes, and represent us as "sharpening our sheep's noses—as shooting our grain into the earth among the rocks—how the cattle shed tears in the pastures, and grasshoppers pine away on mullen stalks, &c."

It is true, we have no corn cribs *three miles in length*, nor corn fields of thousands of acres. The fertile prairie is not here, nor the deep bottoms of the west. Our corn and grain fields are often but "patches," still, we are not the poorest of the poor. Our labor is not unrewarded, nor our tables scantily spread. The fact is, we have some of the best soils in the country, some that is poor enough, and every variety between. Some of it requires much labor and expense to reclaim and subdue it; but every additional amount of labor, judiciously applied, yields additional product. If nature has been less lavish, industry supplies the deficiencies, so that in physical comforts, we may challenge comparison with others who boast a richer inheritance.

We have no cause to be ashamed of our productions, that is, those adapted to our climate and soil. Fifty, sixty, and even eighty bushels of corn to the acre, are no very uncommon crops, and in fact, one hundred and thirty-five bushels have been raised! Twenty-five and thirty bushels of wheat are sometimes produced, which is more than thousands of acres in Ohio can boast of, according to her agricultural reports. Nor are our domestic animals of inferior or ugly growth. Our best beef and pork, butter and cheese will disgrace no market. Our best wool is eagerly bought up and manufactured into the finest fabrics; and doubtless some fashionable beau is now arrayed in it, who does not dream that he is indebted for it to a state which he has pronounced too mean to "keep grasshoppers from starvation." The apple and various other fruits find no more genial climate. Nor is our water power elsewhere surpassed on streams of equal size.

It is believed this state is not backward in the improvements that are going on in agriculture. The true principles of farming are becoming more understood and better applied. Old prejudices are giving way, and men are seeking for light. Farming may never be so profitable here as in some other sections; yet we have the *foundation* for a successful husbandry. We have the rich interval, (bottom,) and the fertile swell; and even our pine plains, which have been considered almost worthless, are found to yield a good return, when subsoiled and manured with ashes and swamp mud. There are farmers in this state, who sell from moderate-sized farms, $1,000 to $2,000 worth of produce annually, and have left a supply for home consumption. We have a State Agricultural Society and several flourishing county societies.

I have no wish to boast what the state can do, but am disposed to defend her agricultural character. If we have industry, intelligence, and morality, what have we to fear? There is no necessity of emigrating to a land of unbounded fertility, in order to enjoy the comforts, and even the luxuries of life. One of the pleasures of farming is, to be making constant improvements—to see useful plants taking the place of thistles, brambles, brakes, (ferns,) and other things that incumber the ground. Such improvements are visible on every hand; and if they constitute the pleasure of farming, wherein is the west better than the east? The true improvements cost something here, but the proximity to market and facilities of transportation will reward a liberal outlay. Both sections are wanted for the millions that are to arise and people the land. Let us leave them the inheritance of a country beautified by the hand of industry, furnishing "pleasant places" for happy homes.

The true philosophy of farming, I understand to be, to increase our crops, at the same time that we increase the fertility of the soil. This, I conceive to be the perfection of husbandry, and

what every one should aim at. If we crop our lands without enriching them, we are robbing posterity. The present generation should leave the soil better, instead of worse, than they found it. P.

Milford, N. H., April, 1850.

THE ENGLISH RACE HORSE.

The English race horse boasts of a pure descent from the Arabian, and under whatever denomination the original stock of our thoroughbred horses have been imported—viz: as Turks, Barbs, or royal mares, there can be no doubt they were selected by the patrons of the turf, and by their agents during the reigns of James I. the two Charleses, James II. and the commonwealth; and whether they were brought from Barbary, Turkey, or the continent of Europe, they were considered as the true sons and daughters of the dessert. The first Arabian ever seen in England was imported by Mr. Markham, in the reign of James I., and the first foreign mares of any note were brought over by the agents of Charles II., under the denomination of royal mares. The change of climate, the pasture, and extreme care and attention in breeding by the best stallions, (and never forgetting the maxim that, "From the brave descend the brave,") have wonderfully increased their size, their strength, and their powers of endurance; and it is generally believed, by the most learned men of the turf, that a first-class English race horse would give 84 lbs. to the best Arabian which can be found, for any distance under ten miles. In 1828, a match was made at Calcutta between the English horse Recruit, carrying, 148 lbs., and the best Arab at the time in India, Pyramus, carrying 115 lbs., two miles. Recruit had been a very short time in India, and had tender feet, which disabled him from taking strong work, notwithstanding which, he won in a trot.

The clearest proof of the improvement which has taken place in the English race horse, is the fact that no first nor second cross from the imported Arab, with the exception of the produce of one mare by the Wellesley Arabian, (Fair Ellen,) is good enough to win a £50-plate in the present day; whereas, in 1740, our best horses were the second and third crosses from the original stock; and we have no reason to assume that the Arabian horse of 1850 has degenerated from his ancestor of 1730. The most distinguished progenitors of the English race horse are the Byerly Turk, the Darley Arabian, Curwen's bay Barb, and the Godolphin Arabian; and no horse of any eminence has appeared in England, in the last hundred years which does not inherit their blood. Of the two former, we know very little; they were the sires of Basto, and of Flying Childers; but the blood of the Godolphin Arabian is in every great stable in England. He was a thick-necked, heavy-shouldered, over-topped horse, without apparently a single good point adapted to racing qualifications. Goldfinder and Eclipse, both foaled in 1764, were considered the most extraordinary horses in the last century—Sir C. Bunbury always asserted that Goldfinder was the best horse. The celebrity of Eclipse, as a stallion, has contributed to his fame far more than his public running, which only lasted two years. Horses of this era were rarely put into training before they were three years old; some never appeared until five years old; and all the great matches and sweepstakes were made for long distances, four, six, and eight miles. Many writers have, therefore, imagined that the horses, in olden times, were more adapted to stay a distance, than our present breeds; but it does not follow, because it was the fashion to run long distances, in 1750, that the horses of that day had greater powers of endurance. Heavy weights and long courses were in vogue, because it was the custom for owners and amateurs to ride in the last half mile with the leading horses; a feat not very difficult of attainment, considering that the race horses had run four miles before they joined the party. Our experience teaches us that the first cross from the Arab frequently show speed; but there are very few instances of the first or second cross which can run beyond the distance of one mile in good company. I, therefore, suspect that the form of the best race horse, of 1750, is inferior to that of a common plater of the present day.

It is computed that there are upwards of two hundred thorough-bred stallions, and one thousand one hundred brood mares, which produce about eight hundred and thirty foals annually; of these, are generally three in the first class of race horses, seven in second class; and they descend gradually in the scale to the amount of 480, one half of which never catch the judge's eye; the remainder are either not trained or are found unworthy at an early period.

Referring again to shape and condition, a good judge may be deceived as to the individual condition of a particular horse. There are horses which run best apparently lusty, and others are only up to the mark when they carry no flesh, and with very slight muscular developments. There are very few horses which require the same work, the same food, and the same physic. Thick-winded horses, with strong constitutions, may be sweated every five days during their preparation, and will take three times as much work as some delicate mares and geldings, of which there are many that never want a sweat. One horse cannot gallop when the ground is deep; another, with thin feet, cannot move if the ground is hard; and a heavy fall of rain will often upset scientific calculations. Mares seldom run in their best form before the month of August; and geldings are considered to be best in the spring.—*Rous.*

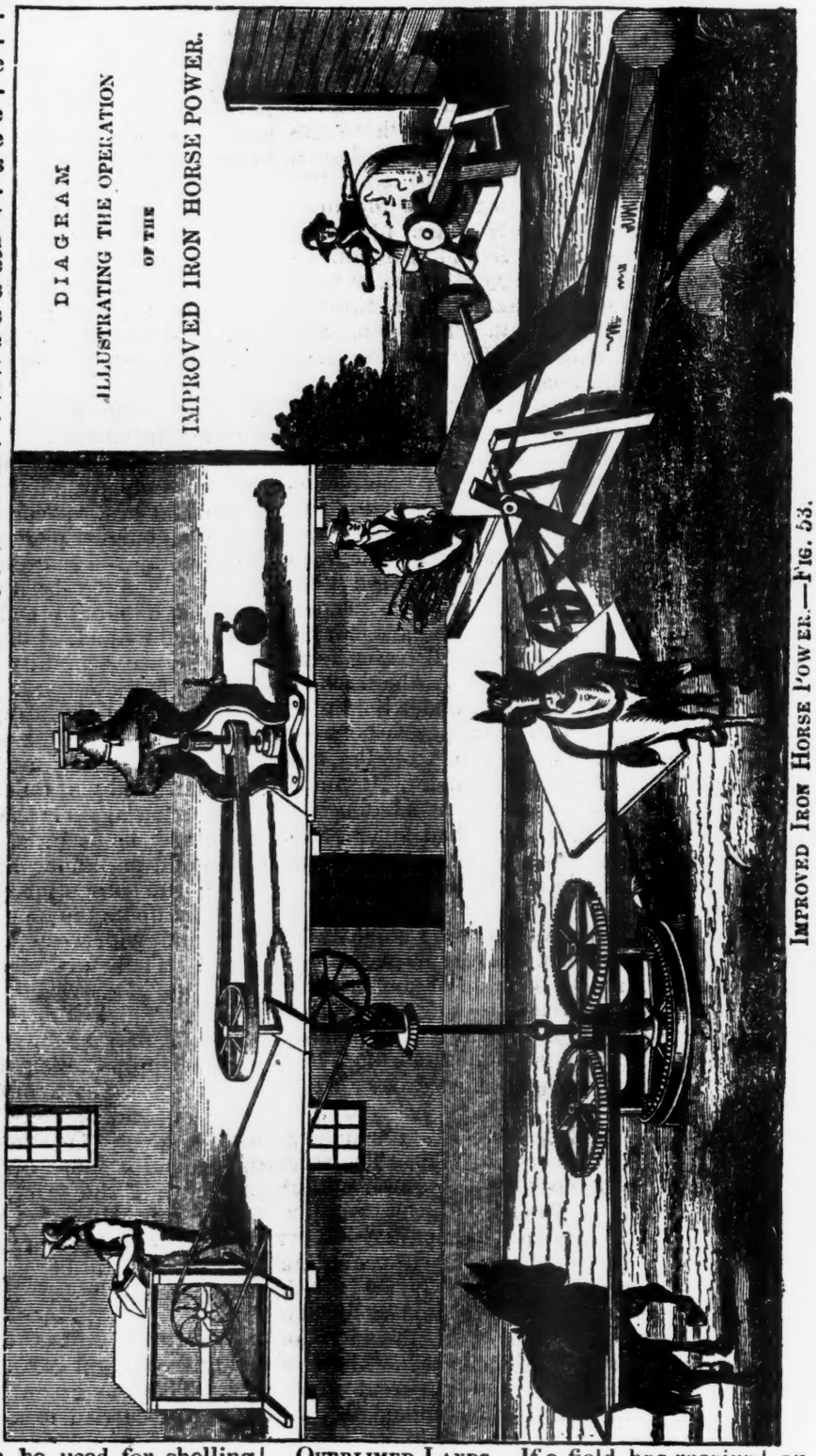
Wasting Manures.—We once knew a large quantity of night soil deposited on a stiff clay sod. This was gradually washed down by the rains and carried to a rivulet close by. Very little effect was perceptible the first season, and scarcely a vestige of it remained the second; yet there was sufficient ammonia and nitrogen in this heap, had it been rightly managed, to have manured a five-acre field, and produced 200 bushels of wheat.

NEW AND HIGHLY-IMPROVED IRON HORSE POWER.

This power is compact, strong, and portable, and without bolts and joints, that are liable to work loose and get out of order. It is made on strictly scientific principles, and is so arranged as to combine the least friction and greatest durability within the smallest compass. Five eights of the machine is firmly connected together, and not weakened by joints, and that on which the power of the horse is exerted constitutes three eights only; thus throwing the force more directly upon the work to be executed, instead of expending it in overcoming friction, produced by complicated wood and iron frame work and cog wheels. In the gearing, great attention has been paid to prevent friction, by placing two pinions opposite each other and to the centre, thus creating a compensating force around the centre of motion, and at the same time preventing wear at the jounals and bearings.

The horse power as seen in Fig. 53, will drive the centre, upright shaft 28 revolutions to one of the horse; and from this shaft, a strap is taken which drives a corn mill. On the same floor, a corn sheller is represented in motion, and on the ground floor we have a thresher, separator, and grindstone driven by a shaft geared from the lower end of the upright shaft. This shows that a number of applications can be made from the same machine in one position. If it is required to thresh the grain in the field, it can be done without difficulty, and then replacing the horse power, as shown in the cut, it can be used for shelling corn, ginning cotton, pumping water, sawing firewood, driving lathes, grinding flour, or sawing lumber.

Four-horse powers are made on the same principle as the foregoing, and of an additional strength, proportioned to the increased power and train. Saw mills are made to accompany, and are driven by this power, which will saw 100 feet of boards, joist, or plank per hour, from logs from one to two and a half feet in diameter.



Improved Iron Horse Power.—Fig. 53.

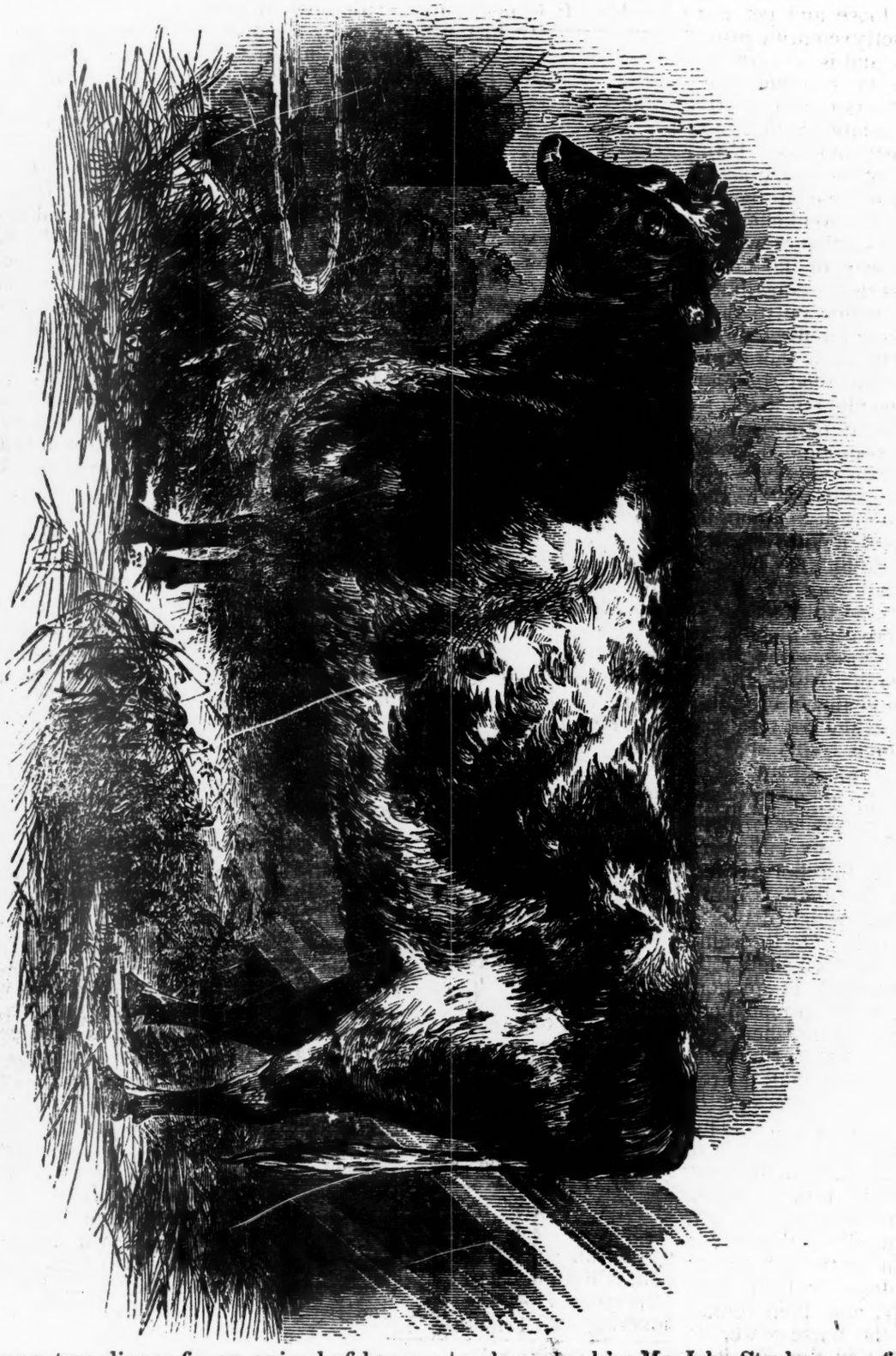
Overlimed Lands.—If a field has received an over dose of lime, add largely of putrescent, fresh vegetable and animal manures, or plow very deeply, or both. Land may thus be readily converted into an abundant and durable store house of fertility.

MERCANTILE LIBRARY

THE PRINCESS TRIBE OF SHORTHORNS.

Below is the portrait of Princess 3d., taken when eleven months old. It represents her as one of the most perfect of animals. Her brisket adorn our pages. Although representing an extraordinary animal, it is yet life-like and natural in all its bearings.

Princess 3d. was imported by Mr. A. Stevens,



Shorthorn Heifer, Princess 3d.—Fig. 54.

is very extraordinary for an animal of her age, while her other points are uncommonly well developed, and her head, neck, and limbs are extremely fine. As a work of art, we think this one of the best cuts we have ever given to

and was bred by Mr. John Stephenson, of Wolviston, county of Durham, England, the most celebrated breeder of shorthorns now living. She was got by Napier (6,238)—out of Rose Ann by Bellerophon (3,110)—Rosette by Belve-

dere (1,706)—Red Rose by Waterloo (2,816)—Moss Rose by Baron (58)—Angelina by Phenomenon (491)—Anna Boleyne by Favorite (252)—Princess by Favorite (252)—Brighteyes by Favorite (252)—Brighteyes by Hubback (319)—Brighteyes by Snowdon's bull (612)—Dutchess of Atholl by Mastermann's bull (422)—Beauty by Harrison's bull (292)—Tripes by the Studley bull (626). Tripes was bred in 1748 by Mr. Pickering of Foxton, out of a cow which he bought in 1739, when a calf, of Mr. Stephenson, of Ketton. The female ancestors of Tripes had been bred by, and in, the possession of Mr. Stephenson and his father, back to 1684, in which year Mr. Stephenson of Acklam, Yorkshire, bought his first cow of the Princess tribe from the Aislabie family, of Aislabie, in Durham.

The Aislabie family, with whom the Princess tribe of shorthorns originated, came over to England, from Normandy, with William the Conqueror; and about the year 1300, settled on the banks of the river Tees, in the county of Durham. Soon after this, they commenced cattle breeding, and it is known that their stock was of superior quality as early as 1600—*two hundred and fifty years ago!* Who now will have the hardihood to assert that *thorough-bred* shorthorns are of *recent origin?*

In the reign of Charles I., the elder branch of the Aislabie family, having by marriage of the heiress, daughter of Sir John Mallorie, become possessed of the beautiful estate of Studley Park, Yorkshire, removed thither, and took part of their cattle with them. In 1684, the younger branch of this family disposed of their estate in Durham, and the residue of their imported stock was then transferred to Studley Park. The same year, but prior to the removal of the cattle, Mr. Stephenson, of Acklam, ancestor of the present Mr. Stephenson, of Wolviston, purchased a cow of Mr. Aislabie, of Durham. Subsequently, he sent his cows to the bulls at Studley Park, and also used bulls in possession of the Pennimans, of Ormsby, who procured their stock of the Aislabies, of Durham, prior to 1684.

About 1700, a Miss Aislabie of Studley Park, married Mr. Milbank of the Barmingham family, of Barmingham, in Yorkshire, and through this marriage, cattle from Studley went to Barmingham. From Barmingham, Mr. Sharter of Chilton, near Ketton, got cows, and hired bulls, and from them bred the celebrated Studley bull (626).

Mr. Pickering lived at Foxton, near Ketton. In 1739, Mr. Stephenson, of Ketton, son of Mr. Stephenson, of Acklam, sold to Mr. Pickering a young cow and her heifer calf, descended on the dam side from the Aislabie tribe of cattle. Mr. Pickering used the Studley bull, and out of the heifer got from Mr. Stephenson, of Ketton, when she became a cow, bred in the year 1748, the cow Tripes. In 1756, Mr. Pickering sold Tripes to Mr. John Hall, of Haughton. Mr. Hall bred Beauty got by Harrison's bull (292)—out of Tripes; and out of Beauty he bred Dutchess of Atholl, got by Masterman's bull (422). Mr. Alexander Hall, on the death of John Hall, his brother, succeeded to his estate; and he bred Brighteyes by Snowdon's bull (619)—out of Dutchess of Atholl; and out of Brighteyes by Snowdon's bull he bred Brighteyes by Hubback. Brighteyes by Hubback was sold by A. Hall to Robert Colling. Robert Colling bred Brighteyes by Favorite (252)—out of Brighteyes by Hubback, and out of her, Princess by Favorite. Princess was sold by him to Sir Henry Vane Tempest, of Wynyard. Sir Henry bred Anna Boleyne by Favorite (252)—out of Princess; and Angelina by Phenomenon (492)—out of Anna Boleyne. Sir Henry died in 1813, and his widow, the countess of Antrim, bred in 1816, Anna by Lawnsleeves, (365)—out of Angelina. In 1818, she sold Angelina to Mr. John Stephenson, of Wolviston, great, great grandson of Mr. Stephenson, of Acklam. All the sires and dams in the pedigrees of these imported cattle, which were bred by Mr. John Stephenson, occurring after Angelina, were bred by him.

This is the history in brief of this superb tribe of shorthorns. In importing this stock, we think Mr. Stevens has done the country great service. Princess 3d. is to be seen on the farm of Col. J. M. Sherwood, of Auburn, New York, who also possesses several very fine shorthorns of the same blood.

The bull Exeter, advertised at page 200, was imported by Mr. Sheafe, at the same time with Princess 3d.; and by reference to his pedigree, there stated, it will be seen that he is substantially of the same blood. He is the only bull of the Princess tribe of shorthorns ever imported into the United States. We think him as good in all his points for a bull, as Princess 3d. is for a heifer. His color is mostly a yellow-red, which is a bright-red, with a fine golden or saffron undertinge, arising from a rich, yellow skin. His style, handling, and quality are of the finest kind.

NEW WHEAT-DIBBLING ROLLER.

An English friend has described to us an implement which is sometimes used for sowing wheat abroad, and which, in many cases, may be advantagously used in this country. It consists of a cast-iron roller, say 2½ to 3 feet diameter, and of 3 or 4 sections, each 9 inches wide. The outer circumference is made convex, by rising to the centre from each side, forming an angular ridge, four inches higher than the edges. This implement is drawn by one horse across the field, previously prepared by the plow and harrow, and forms a series of elevations and depressions, 9 inches apart, the horse returning in the outside depression which receives the inside elevation of the roller. This throws the whole field into drills of uniform depth and distance. The wheat is then sown broadcast, and the harrow is applied. This combs down the elevations, and leaves all the seed beautifully and regularly planted, just two inches in depth.

Largest-Sized Wrought-Iron Plows.—Can any of our readers inform us where the largest-sized wrought-iron plow can be procured? We will pay a liberal price for one constructed on good principles.

MR. ROBINSONS' TOUR.—No. 18.

Visit to Jehossee Island—Rice Plantation of Ex-Govenor Aikin.—I hope my readers have read with some degree of interest, my account of Col. Carson's rice plantation, in the March number of the Agriculturist. The minuteness of that description will enable me to shorten the present one. I left Charleston on the morning of January 25th., which was like a mild summer day in autumn with us, and followed the windings of a crooked, narrow channel, through which small steamboats run towards Savannah by the inside channel to Beaufort. We were several times interrupted by meeting large timber rafts that come down the Edisto River, and through this passage to Charleston, and had to wait till they could be separated, to give us a passage through this fit abode of aligators, that are often to be seen "as thick as three in a bed."

Although my point of destination was only thirty miles direct from the city, I was twelve hours on the passage. This island contains about 3,300 acres, no part of which is over ten or fifteen feet above tide, and not more than 200 to 300 acres but what was subject to overflow until diked out by an amount of labor almost inconceivable to be performed by individual enenterprise, when we also take into account the many miles of navigable canals and smaller ditches. There are 1,500 acres of rice lands, divided into convenient compartments for flooding, by substantial banks, and all laid off in beds between ditches 3 feet deep, only 35 feet apart. Part of the land was tide-water marsh, and part of it timber swamp. Besides this, Gov. A. cultivates 500 acres in corn, oats, and potatoes; the balance is gardens, yards, lawns, and in woods, pasture, and unreclaimed swamp. Wood is becoming scarce on the island, so much so, that he drives the steam engine to thresh the crop, by burning straw, which answers a good purpose, but is of doubtful economy; though he intends carefully to save and apply the ashes, which are very abundant, and note the difference in value, between that application and the manure made from the decomposed straw. It is generally calculated that two thirds of the straw will be sufficient fuel to thresh the crop; but Governor Aikin has not found it so. He says there is no more danger of fire in the use of straw than in any other fuel. The flue is carried off fifty or sixty feet along the ground and there rises in a tall stack that *never emits any sparks.* Sugar planters, and all farmers who use steam, may do well to notice this. I recollect Mr. Burgwyn carries his off from his barn in the same way, with the same effect.

Governor Aikin, however, has one improvement that I recollect mentioning to Mr. B., that he would require; that is, a "man hole" into this flue, to enable him to clean out the great accumulation of cinders at the bottom of the stack. In Gov. A.'s, there are two which are closed by iron covers.

The threshing apparatus is a most convenient one. The sheaves are brought from the stacks in the great smooth yard, to a large shed where all the sheltered grain can be saved, and are there opened and laid on carriers, similar to cane carriers, which carries them up to these machines in the second story, where the grain is separated from the straw, and falls down into winnowing machines, from whence it is removed by hand, (it might be carried by machinery,) to another part of the building over a canal, and is let down into boats to carry about half a mile to the hulling mill, which is exactly like Col. Carson's, and driven by tide. It is carried from the boats to the mill by hand, or rather head, where a little head work of another kind would take it up out of the boat by elevators.

The straw is consumed almost as fast as threshed. And here the saving of labor in getting wood, as well as the saving of labor stacking the straw and hauling manure, must be taken into account, as an offset to the loss of manure in burning the straw.

The rice for seed is always threshed by hand, as experience has taught that the vitality of a considerable portion is injured in the threshing machines. *It is just so with wheat.* [An experienced farmer thinks about one grain in 500 is injured by threshing with machines, and as about 6 per cent. by the last process, there is still a great pecuniary advantage in favor of threshing with a machine.—Eds.] The quantity of seed to the acre is 2 to 3 bushels, planted in drills 15 inches apart, opened by trenching plows, and singular as it may sound to some other rice planters, Governor Aikin plows all of the land that will bear a mule or horse, of which he works about forty and twenty oxen.

Corn is generally planted in hills, upon the upland part of the island, which is sandy, 4 by 5 feet, two stalks in a place, and yields an average of 15 bushels per acre. Corn upon the low, or rice land, does not yield well, though it makes very large stalks. With sweet potatoes, on the contrary, the low land produces nearly double, and of better quality, averaging 200 bushels to the acre, and frequently 400 bushels. The average yields of rice is 45 bushels to the acre, and upon one eighty-acre lot the average yield is 64 bushels. The crop upon that lot last year was 5,100 bushels, weighing 234,600, lbs. that is 46 lbs. to the bushel. This made 229 barrels of whole rice, two barrels of middling, and two and a half barrels of small rice, which, at 600 lbs. each, (probably about 20 lbs. below the average,) would make 140,100 lbs. This, at three cents, will give the very snug sum of $4,203 for the crop of 80 acres.

The average annual sales of the place do not vary materially from $25,000, and the average annual expenses not far from $10,000, of which sum $2,000 is paid the overseer, who is the only white man upon the place, besides the owner, who is always absent during the sickly months of summer. All the engineers, millers, smiths, carpenters, and sailors are black. A vessel belonging to the island goes twice a week to Charleston, and carries a cargo of 100 casks. The last crop was 1,500 casks—the year before, 1,800, and all provisions and grain required, made upon the place. Last year, there was not more than half a supply of provisions.

Like nearly all the "lower-country plantations, the diet of the people is principally vegetable. Those who work "task work" receive as rations, half a bushel of sweet potatoes a-week, or 6 quarts of corn meal or rice, with beef or pork, or mutton occasionally, say two or three meals a-week. As all the tasks are very light, affording them nearly one fourth of the time to raise a crop for themselves, they always have an abundance, and sell a good deal for cash. They also raise pigs and poultry, though seldom for their own eating. They catch a great many fish, oysters, crabs, &c.

The carpenters, millers, &c., who do not have an opportunity of raising a crop for themselves, draw large rations, I think a bushel of corn a week, which gives them a surplus for sale. The children and non-workers are fed on corn bread, hommony, molasses, rice, potatoes, soup, &c.

The number of negroes upon the place is just about 700, occupying 84 double frame houses, each containing two tenements of three rooms to a family, besides the cock loft. Each tenement has its separate door and window and a good brick fireplace, and nearly all have a garden paled in. There are two common hospitals, and a "lying-in hospital," and a very neat, commodious church, which is well filled every Sabbath with an orderly, pious congregation, and service performed by a respectable methodist clergyman, who also performs the baptismal, communion, marriage and burial rites.

There is a small stock of cattle, hogs, and sheep kept upon the place for meat, which are only allowed to come upon the fields in winter, under charge of keepers. The buildings are all of wood, but generally plain, substantial, and good. There is a pretty good supply of tools, carts, boats, &c., and the land is estimated to be worth $100 an acre for the rice land, which would be $150,000
The 500 acres upland, $25 per acre, 12,500
The negroes, at $300 each, 210,000
Stock, tools, and other property, say 7,500
$380,000

which will show rather a low rate of interest made from sales of crops, notwithstanding the amount of sales look so large.

Now the owner of all this property lives in a very humble cottage, embowered in dense shrubbery, and making no show, and is, in fact, as a dwelling for a gentleman of wealth, far inferior in point of elegance and convenience, to any negro house upon the place, for the use and comfort of that class of people.

He and his family are as plain and unostentatious in their manners as the house they live in; but they possess, in a most eminent degree, that true politeness and hospitality that will win upon your heart and make you feel at home in their humble cot, in such a manner that you will enjoy a visit there better than in a palace.

Nearly all the land has been reclaimed, and the buildings, except the house, erected new within the twenty years that Governor Aikin has owned the island. I fully believe that he is more concerned to make his people comfortable and happy, than he is to make money.

CHEAP FARMING LANDS IN VIRGINIA.

Taking into account the fertility and all the conveniences of navigable waters, and the products of the same, which add to the comforts and luxuries of life, and also the mildness of climate, I believe the tide-water region of Virginia offers the cheapest lands, according to their intrinsic value, of any part of the United States. Lands, that, under a moderate state of improvement and cheap system of fertilising by lime, marl, clover, or peas, or by an application of 200 lbs. of guano to the acre, can be made to average at least twelve bushels of wheat, or thirty bushels of corn to the acre; which can be bought at from $10 to $30 an acre, with good buildings and fences, within two days' sail of New York, I hold to be very cheap. Thousands of acres of timber land, or "old-field" land, in the same region, can be bought for one to five dollars an acre. I was lately offered a very productive, well-improved farm upon the "Glo'ster Low Grounds," lying upon the navigable waters of the Severn, for $25 per acre. This farm is all underlaid with rich marl only a few feet from the surface.

The "flat lands" of the Rappahannock are worth from $10 to $20 an acre. The "hill lands" or "forest," are worth about half that sum, according to the state of improvement or locality.

As to the quality of the people, it may be gathered in a great degree, from the fact that neither doctor, lawyer, judge, justice, sheriff, clerk, nor constable can live by his profession. In the county of Caroline, with 20,000 inhabitants, for instance, I was told that a suit in court was almost unknown. The sheriff has not had a writ in his hands this year, nor has a suit, either civil or criminal, been instituted in the justice's court.

I do not think that emigrants from any of the northern states have any more to apprehend on account of health, than they would in the west. The condition of agricultural improvement may be imagined, when I tell my readers that nine tenths of the plows used are the old "Freeborn pattern," little one-horse plows, and that land is planted with corn one year, and sowed with wheat and weeds next, and then corn again, without manure, and yet people live, and the land does not become absolutely barren under such an exhausting system. No wonder that land is cheap—for the owners don't know its value. S.

Deep Plowing uniformly increases the quantity of grass, grain and root crops. It also tends to consolidate light soils. It has been found that the heads of grain, though much fuller and heavier, stand more upright on such land as has been deeply plowed. This is attributable to the greater strength of the roots, and the much greater depth to which they penetrate, when invited to it by deep, thorough cultivation. Such soils, however, always require for perfecting their pulverisation, and fully developing their tillable qualities, to be well harrowed and rolled.

THE COCONUT OF CEYLON.

THE coconut is very extensively cultivated in Ceylon—indeed, nearly the whole island is encircled with this useful and productive tree, which may be justly designated the *summum bonum* of the native population. The cultivation of it is rapidly increasing; for it is found to be a most valuable and safe investment of property, as it requires a trivial outlay, and little further care than the planting, except protection from cattle during the first two years, thriving as it does most luxuriantly in sandy soil, and bearing fruit in the fifth year. The estimated value of the produce of a single tree is a rix dollar per annum.

This tree frequently exceeds 100 feet in height, and there is no part of it which is unproductive to the owner; from the flower he obtains toddy, from which the finest arrack in the world is distilled, and from which is also prepared a coarse-grained, brown sugar, called by the native "jaggery," and an elegant description of vinegar. The green fruit yields a delicious cooling beverage to the weary traveller, and a vegetable pulp, highly esteemed by the natives; the ripening fruit is also used as food, or oil is extracted from it, which is now manufactured into candles and soap, and the refuse, or oil cake, is used for feeding cattle; while the external husks, after long soaking, are beaten into coir, which is now well known in England, and is used in stuffing matresses, &c., and from which cordage and matting are manufactured. The leaves, when, interwoven, are called "cajan," and make excellent thatch, and protection from the sun's rays, or when burned are converted into an alkali; the young leaves are used by the natives for a variety of useful and ornamental purposes, particularly the latter, on joyous and festive occasions, when bamboo arches are decorated with them, and brooms and mats are made from the young pine. A medicinal oil is extracted from the bark, which the native practitioners use as an efficacious remedy in cutaneous diseases. The root is also used for medicinal purposes, and its elastic fibres are woven into strainers for liquids; while the timber may be used in building, or converted into beautiful articles of furniture. But it would be endless to describe the various additional uses to which every portion of this valuable tree is convertible, which are said to be upwards of 100, and have formed the theme of many native poets. There are annually exported from the colony about £800,000 worth of coconuts, £30,000 worth of coconut oil, £7,000 worth of arrack, and £7,000 worth of coir.—*Bell's W. Messenger.*

A SCRAP OF AGRICULTURAL HISTORY.

THE settlement of this part of the country was commenced some 70 years ago. The soil, as found by the pioneers, was for the most part poor, being robbed by yearly fires of that which would have made it rich. The farmer, therefore, was poorly paid for his toil. No manure of any kind was used, except the little made in the barnyard.

Some forty years ago, clover and plaster were introduced, the effects of which were surprising. Barren fields were at once clothed with verdure, and the air filled with the delicious fragrance from land laden with clover. As a consequence, crops of all kinds were greatly increased, and the cultivators were highly elated, supposing that they had at last struck upon the true secret of farming.

The course pursued, was, first to seed down with clover, then pasture for two or three years, and fallow for wheat; next, corn, and lastly, oats, seeding down again. Nobody dreamed that it was possible for the soil to become exhausted under this kind of treatment; but after 25 or 30 years, the farmers began to complain that their clover seed did not come up, and in some instances died after it was up. The soil being defective, was never once thought of as a probable cause. Unsuccessful efforts were made year after year, until the truth was forced upon them that there was an ingredient lost from the soil, necessary to the growth of clover. As a result of this state of things, our crops became light again, and our fields, instead of blooming with clover, were brown with sorrel. Our land became poorer instead of better, until we were forced to abandon the raising of wheat, except on newly-cleared lands or those made rich from the avails of the barnyard.

Some six or seven years ago, one of my neighbors, more enterprising than the rest, made an experiment with lime, upon a small piece of land as poor as could be, in the middle of a large field. A crop was taken from the whole, and an effort made to seed down to clover, and in the month of June, the year following, nothing but a mass of sorrel could be seen, except the small piece limed, which was covered with clover and destitute of sorrel. Other experiments with lime have since been made with the same result. E. A. ATHERTON.

Lackawana, Pa.

TO MAKE RHUBARB JAM.—Boil gently, for three hours, an equal weight of fine sugar and rhubarb stalk, with the juice and grated rind of a lemon, to each pound of the fruit. When the true flavor of the rhubarb is much liked, the lemon peel should be omitted. A very good jam may be made with six ounces less of sugar to the pound, by boiling the rhubarb gently for an hour before it is added.—*Manchester Receipt.*

A NEW CLOVER FOR THE SOUTH.—The Tallahassee Sentinel speaks of a Chilian clover, sent to Governor Brown, from the patent office, which was carelessly sown three years ago, but which has continued flourishing and prolific ever since. It bears a pale-blue flower, and grows 18 inches high. We hope our friends in that section will watch its character, and hereafter give us a full account of its merits and adaptedness to the south.

TO CURE CHILBLAINS.—Wash the feet with water, saturated with alum, and draw on a sock made of soft, fine, old linen

REVIEW OF THE APRIL NUMBER OF THE AGRICULTURIST.

Manuring Orchards.—Whether this is advisable, or not, depends entirely upon the natural soil and situation. Trees that are forced when young are always tender and short-lived. I agree with the writer entirely in the advice to lay the orchard down in grass, and give the trees a low top. Many persons are continually pruning trees so as to carry up a "round head" high in the air. I would sooner cut off that head, and compel the lower limbs to form the fruit branches. The advice to use ashes, &c., for orchard manures, I approve of; but not whitewash. Take my advice, and you never will whitewash a fruit tree. Use strong ley of wood ashes, and you will get all the advantages, and none of the injuries of whitewash.

Juvenile Vagrancy and Crime—Their Remedy.—If you have "full confidence in our ability to regenerate the world," it is more than I have; and unless a speedy remedy is found for the evils of this dreadful disease of vagrancy, we shall soon be past regenerating ourselves. I admire the philanthropy of the heart that dictated the plan of redemption detailed in the article under consideration; but I am constrained to say, that it can better be carried into effect in the state of Utopia, than in the state of New York. I hope no one will be tempted into so wild a scheme as to spend his money to buy a farm to reclaim these vagrants upon, by the system detailed in this article. [But it has been done in France, good sir; then why not in the United States? We have more faith than you seem to profess, in this matter. Give us "your own plan, certain, speedy, and Christian, in five words."—Eds.] I would sooner think of reclaiming a swamp, by "moral suasion" to the bull frogs to eat up the mud, and thereby give me a dry soil to cultivate.

New Mode of Ventilation.—"Very important if true," might have been added. The insertion of the elbow pipe in the chimney may answer a good purpose in assisting the draft of the chimney. Those having smoky ones may do well to try it, it looks reasonable. So does the plan of ventilating a room, *if* the air current will set outward instead of inward, which I think will depend much upon the rarity of that in the room, as compared with that outside. Important as it may be to greenhouses, I hope no one will be *green* enough to incur great expense in this new mode of ventilation until he has proved it is not itself rather *green.*

Qualities of Lime, &c.—Notwithstanding I was much interested in reading this generally good article, I was disappointed that no opinion was given on the question stated—"Which is the most useful for the field, oystershell or mineral lime?" And also, "Is not magnesian lime always injurious?" [Both questions are answered in the whole article, to the *very careful* reader.—Eds.] The merely giving the constituents of limestone and shells, does not answer the question, to common minds. By some, it is stoutly contended that shell lime is superior to any other; yet why should it be superior to lime made from stone, composed of almost the same substances as the shells? If the shells were ground into powder, as is now practised in some parts of the country, the result from the use would be different. Lime burned from magnesian limestone is considered by many persons vastly superior to any other; while others contend for exactly the contrary effect. Both are in some measure true. It is owing to different qualities of soil.

"Lime is a direct food for plants." This is a rock that has wrecked many a tyro in its use. Believing it to be a direct food for plants, they have given them no other; and depending upon the lime alone, has injured instead of benefiting their land. Lime must have dead vegetable matter to work upon, or it will use up the living plants.

"The effect of lime is not perceptible in the soil the first season it is applied." What? Not when wheat crops have been more than doubled by one dressing of fifty bushels to the acre, sowed and harrowed in with the wheat? If "not perceptible in the soil," it is in the crop. [Lime may, under a few peculiar circumstances be decidedly beneficial the first year, but that is a result seldom perceived. By sowing early in fall, with wheat, its effect may be felt the following year before the wheat is matured.—Eds.]

Combined Wire and Picket Fence.—It strikes me that this is a very excellent invention. If it can be made in ten-foot pannels, with hooks at the ends to attach them together, so as to set it up zig-zag, without posts, or only supported by stakes driven in the ground, it will make a very good kind of hurdle fence, lighter and easier moved than the "ladder fence," and more durable, I should think. But for this, the base board must be dispensed with, and if it were not for the heathenish American custom of letting those filthy brutes, the hogs, run in the streets, it might always be dispensed with. It is some consolation to think that no fully-civilised human being will suffer his hogs to run at large, and as the world becomes civilised, this heathenish custom will cease to exist.

Removal of Slaughter Houses from Cities.—"When shall we have this reform so much and so long needed?" Not so long as we have leading politicians pandering to the base passions of butchers, and all their dependants who have a vote to give to sustain such politicians in power; and who cry out whenever such a reform is spoken of, that it is the rich trying to oppress the poor by driving them from the city, under the pretence that slaughter houses are unhealthy, when, in fact, it is nothing but an effort of these "purse-proud aristocrats," to get them out of the city, so as to get rid of that class of people that are more offensive to their noses than the smell of putrid blood and stinking offal. Slaughter houses, distilleries, tanneries soap factories, and some other city nuisances belong to bygone ages, and it is an evidence of a great want of refinement in any city, to permit them to exist within their limits in this railroad-moving, and cholera-breeding age. So hit 'em again, and I will lend you a hand with my harpoon whenever you are likely to be run down.

The Potato Curculio.—Here is a most valuable

and learned article, upon a subject well worthy the attention of all scientific agriculturists, which shows that it flows from a well-informed mind, that has made the subject treated of, a study of careful attention. No doubt from the pen of some professor, or scientific gentleman, says the reader, perhaps. And yet, I say, if I am not much mistaken, this valuable article is from the pen of a lady. Not from one of that numerous class of wise farmers, who "don't know as your paper is of any use to them, as they do not reckon they could learn anything new in an agricultural paper."

Roads.—How is this? Do you seriously propose to combat the old and firmly-established notion of straight roads. Up hill or down, through swamps or fields, no matter where—the road must be *straight.* This is the modern American science of laying out roads. And you might as well try to move the mountains over which they climb, as to move the fixed opinion in favor of the direct line over the hill, instead of the equally short one on a level round it. I have read of the "emigrating hoards of rats," that they never turn aside for any obstacle; and I have seen the same thing illustrated by the squirrels in Ohio. During their great emigrations, they will climb over all obstacles or swim ponds, rather than go around; and it always seemed to me that those who make and travel roads in this country, are possessed of the same blind faculty of seeing nothing but what is directly before them. You may keep on driving at this species of insanity, and I will always be ready to lend you a hand, and let us see if we cannot wake up enough good sense in men, until they are as willing to go around the hill as over it.

Improved Shorthorns—Bates' Stock.—To nine tenths of your readers, this article is as uninteresting as would be a pedigree of Noah's stock printed in Greek, or Pottawattomie. As I go distinctly against all "bull fights," I shall rank this one between your two correspondents in the same category of those more bloody ones I have seen at the "Plaza de Toros," in Spain. I am sorry that you should so far cater to the taste of the baiters, as to furnish them the ground on which to make such an uninteresting exhibition, which, unlike baiting in the ring, we may see or let alone. You compel us here, in looking over the pages of our favorite journal, to take a look at it. As I see we are threatened with another exhibition, I wish to enter my protest to show non-assent," and to assure you that I shall "take the bull by the horns," if thrust at us again, I hope this will be the last bull fight in the Agriculturist. [We cannot agree with our correspondent here, for pedigrees are of great importance.—Eds.]

Guano vs. Worn-out Land.—There might be thousands of equally strong statements made of the value of guano, and yet people would say they could not afford to buy it, it is so dear. The value of this guano, if applied to small grain, and followed by clover, would be far greater than is shown by this statement, for the advantage to the clover and succeeding crop of corn would be more than appears to this crop.

The Best Rotation of Crops.—Perhaps it is presumptuous in such a young farmer as I am to dispute anything advanced by so old a one as Judge Beatty; yet if I differ in opinion from him I shall venture to state it. First, then, I do not think the cultivation of a variety of crops requires more fencing, if the most profitable and judicious system of fencing were once adopted, and that is, *no* fencing upon strictly grain or hemp farms, as I think his is; though I am aware that he keeps considerable stock, particularly sheep, but these are mostly kept in permanent pastures; and all the advantage that he derives from pasturage of his fields after divested of the crops, will not pay for keeping up fences. He charges upon wheat that it is "a very exhausting crop." Now I venture to say that if Judge Beatty had taken any one of his fields, the soil of which is limestone clay, and sowed it in wheat the first crop that he ever planted upon "Prospect Hill," and continued it in wheat and clover alternate years ever since, which is a period of near fifty years, giving back to the land the straw only, that the last crop would have been as good as the first. It is not the wheat crop that is so exhausting, it is the manner of treating the land. "The corn should be plowed deep," is another point that we shall differ upon. I think corn land should be plowed deep, I don't care how deep, if it is two feet all the better, but never plowed deep while the crop is growing.

Valuable Breed of Fowls.—Whether *fowl* or *fair*, if you have got anything *new*, do send them to Boston. No matter whether their legs are blue or green, you will find somebody there *green* enough to grab at them.

Georgia Farming.—I differ somewhat from the opinion of Mr. Moore, (who, if I mistake not, is an old acquaintance of mine,) about oak leaves for manure. If spread at the rate of 100 cart loads to the acre, with fifty bushels of lime, I think he would see a great benefit.

American Wine.—I never shall be able to endorse the quality, until my worthy old friend Longworth sends me a dozen or so down to the "Valley." I think if I should call to mind a few of the scenes of our youth, that he would not only send it, but come and help drink it.

Guano.—I commend this article to the attention of every person about to purchase, and then let him be sure he gets the genuine article, be careful from whom he buys, or he may buy "a pig in the poke."

The Farm of L. M. Stevens, Norwalk, Connecticut.—This is coming too near home for me to venture to say much, lest I should betray myself. I am truly glad to see this farm described, not only for the benefit of Mr. Robinson, but to encourage others to "go and do likewise." I know this farm well in Auld Lang Syne, and I can truly say, that I was highly delighted when visiting it a short time ago, to see the great improvements which Mr. Stevens has made there.

Poultry Inquiries.—Will any other domestic animals succeed so well in large flocks or herds

as small ones? I think not. Poultry never thrive so well in any other situation, as in the forest. Some of the new settlers in Ohio, living in a log cabin in the woods, have been more successful in raising poultry than the most careful and costly breeders. If hens are confined in a yard, the earth should be often dug up, and they should be fed with meat, or else they cannot lay eggs. I have seen chickens in a coop upon a long voyage eat one another.

Agricultural Geology, No. 2.—Better and better. I cannot commend these articles too highly. Yet I wish to inquire, (as seems to be stated in this article,) whether all the earth was once rock, and that all the soft soil has been disintegrated from a solid substance, by the slow action now at work leveling the mountains? If you please, Dr. Antisell, explain this matter a little more fully.

Amount of Food Raised on an Acre.—Wonderful as this calculation may seem to those who have never reflected upon the subject, it is even excelled by some other articles of human food. Certainly by turnips, beets, pumpkins, and apples. Then what vast amounts of human food are sometimes taken at a single draught of the net, from the sea. I have seen 3,000 shad taken at once, when a boy—enough to give a man a shad a day for eight years, and leave him eighty over, to treat his friends. Truly, upon reflection, it is not wonderful that so large a portion of mankind are like "the lilies of the field.

Cultivation of the Sweet Potato.—A practical article from a practical man. Irish potatoes, (I hate that appellation—why not call them American potatoes,) can be sprouted and planted in the same way when seed is scarce.

The Forest Scenery of California.—Rather more interesting than anything else from the same source, that I have seen for a long time.

REVIEWER.

QUANTITY OF AMMONIA IN BONES.—There is about 33 per cent. of animal matter in fresh, dry bones, consisting principally of gelatine, with some fatty matter. Gelatine yields nearly 17 per cent. of nitrogen. We shall thus find, after all deductions, that we have from three to four or five pounds of ammonia, slowly evolved by decomposition, for every bushel of bones we put upon the soil. This accounts, in part, for the valuable effects from the application of bones.

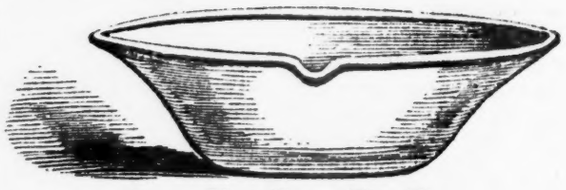
When bones are first burned, only a minute portion of ammonia will be added to the soil from their application, the nitrogen and hydrogen forming it, being exceedingly volatile, and both being driven off in their calcination.

THUNDER STORMS.—When overtaken, out of doors, by a thunder storm, never resort to a tree for shelter; better take a wet skin and a safe retreat to the open field. Do not have any metal, nor metalic implements about you while exposed to electricity. Col. Wade Hampton informs us, he once lost a valuable field hand, who was struck down while retreating from a thunder shower, with a hoe carried perpendicularly on the head—a negro accomplishment quite prized by the victim. Col. H. said he resuscitated two or three others when stricken down, by throwing cold water over them.

A bright pitchfork, spade, or manure fork carried tine upwards is certain to attract electricity during a thunder storm.

GLASS MILK PANS.

THE superiority of glass milk pans over all others, so far as the preservation of milk and the facility of keeping them clean are concerned, is unquestionable; but whether they will prove the most economical in the end, will depend entirely upon the care with which they are used, and the accidents that may befall them. Metallic pans are liable to oxidate or rust, and consequently are more difficult to keep clean; wooden ones absorb the milk, which soon turns sour, and require frequent scalding to keep them sweet; and earthen ones are more objectionable than any other from their weight, liability to break, and the destructive or deleterious qualities of their glazing.



GLASS MILK PAN.—FIG. 55.

Glass milk pans can be furnished of very convenient form or size, with or without covers, for about 20 cents per pound, say from 75 cents to $1 each.

COMPOSITION OF GUANO.—The fresh dung of the sea eagle, from which guano is made, in part, was analysed by Coindet, and found to contain of uric acid, 84.65; ammonia, 9.21; phosphate of lime, 6.13. This proportion of uric acid gives 28.3 of nitrogen, equivalent to 36.3 of ammonia, or 42.43, altogether a composition of astonishing richness, and of great benefit for land when thus applied. Its place, however, is fully supplied by the guano, which is the same, and similar manures, from which large proportions of the ammonia-forming materials have been lost by passing off into the air, and by this very operation, too, augmenting the proportion of the phosphates, (the mineral, non-evanescent portions,) which are equally important to vegetation.

SEEDS taken from a warm, dry climate have been found most productive when used for a change. This will account for the want of success in American farming, from most of the choice specimens of seed wheat and oats brought to this country, from the cool, moist climate of Great Britain.

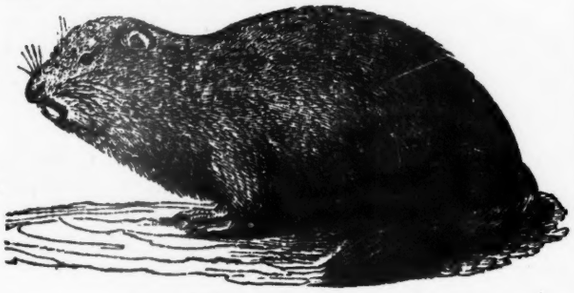
THE cheapest labor is one's own. The best is just like it, for it is what is done by ourselves.

THE WOODCHUCK.

THE woodchuck, (*Arctomys monax*,) ground hog, or Maryland marmot, all of which names it is more or less known by, or some nearly-allied species, is found, as far as we have been able to ascertain, in all the temperate parts of the continent, from New Brunswick, in the British Possessions, to Carolina, throughout the Atlantic states; from Texas, along the eastern range of the Rocky Mountains to Hudson's Bay; and west of those mountains from California to Oregon. In some localities, it appears to select white-pine forests for its abode, while in others, it seems to prefer rocky pastures or cleared lands, along sunny slopes in front of stone walls.

These animals form long, deep burrows in the earth, into which they fly during summer upon the least alarm. In these excavations, they take good care to make themselves soft beds of dried grass, in which, in autumn, after they close the mouths of their burrows, they roll themselves up into mis-shapen balls, and there lie dormant until spring, without food, when they are generally very fat.

According to Audubon, in the month of May, or sometimes in June, the female brings forth her young, generally four or five in number, but sometimes seven or eight. When captured at an early stage of their growth, they may be fed on cabbage, or other garden vegetables, pumpkins, green corn, &c., and become quite tame, hybernating during winter precisely in the same manner as in a state of nature.



THE WOODCHUCK.—FIG. 56.

The natural food of these animals consists of green clover and other tender grasses, potatoes, pumpkins, apples, and other succulent vegetables and fruits, of which they devour vast quantities, and so far are considered injurious to the farmer.

"On being surprised or pursued," says Audubon, "this species runs very fast for some eight or ten yards, and then frequently stops short, and squats down close to the ground, watching to see if it has been observed; and will allow you to approach within a few feet, when it starts suddenly again, and again squats down as before. Not unfrequently, under these circumstances, it puts its head under the dry leaves, or amid tufts of grass, to conceal itself from the pursuer. You may then generally capture or kill it with a stick."

These animals bite severely, and defend themselves fiercely, and when unable to escape, sit up upon their haunches, snap their teeth, and will turn and make battle with a dog of more than double their own size. When near their burrows, however, they never stop to fight, but retreat with all possible dispatch.

THE SUBSOIL.

MANY persons have experienced disease and destruction, in their crops, when oft recurring on long-cultivated fields. The application of various specific manures and different modes of cultivation, are not always effectual remedies. May not the cause be generally attributed to the want of fresh earth, and a wider range for the roots of the plants? Though these are difficulties seldom occurring in this comparatively young country, they are often to be contended with in Europe, and may ere long become of serious consideration among us.

A certain remedy for these evils is *deep tillage*, by which, small portions of the subsoil are brought near the surface, and add new and necessary aliment to the crop. There is no danger from this operation, if it be not brought up in too large quantities. If there be any inert or noxious matter in it, as a stiff, or poor, intractable clay, an excess of iron, and especially in that form in which it frequently occurs in an acid soil, the *protoxide* of iron, or if there be undecomposed peat, and the like, add lime, ashes, and warming animal manures, and mix the matters thoroughly with the surface, by harrowing, and you will thereby not only secure a healthy soil, but a prolific one.

An unmatched system of cultivation, to remedy these and numerous other difficulties, is the use of the subsoil plow, which gradually, year by year, amalgamates the upper and subsoils; and while it is giving health and vigor to the surface, it is ameliorating and improving the lower soil and speedily fitting this also for the great purposes of ministering to vegetable nutrition.

In illustration of this principle, it may be stated, that the inhabitants of the island of Madeira sometimes trench their land to a depth of five or six feet, to get at the fresh earth, for which they would otherwise be obliged to send to Europe, at great expense to renew.

SPAYING HEIFERS AND MILCH COWS.

THIS is an operation sometimes practised by intelligent farmers, when they wish to make beef or working animals of the former, or to produce the flow of milk from the latter, and at the same time enrich its quality. Sound philosophy and profitable results sanction this practice. There is a periodical tendency or inclination of the female to perpetuate her kind, which occasions a serious interruption to her economical habits, and is decidedly injurious for any other purpose than that designed by nature in continuing her race.

Where calves are not required, and the heifer is wanted for work and beef only, the spaying should be done before she has been suffered to take the bull. By this operation, she will be better fitted for the yoke or shambles, weight for weight, than the ox. If intended for milk,

she should be allowed to attain the fullest development of her milking apparatus, milk veins, udder, &c., which does not occur till she has had her second or third calf. She will then, if spayed in the proper time and manner, and if properly fed, milked, and managed afterwards, continue to yield milk for years; and when it is advisable to withdraw her from the dairy, she will fatten readily, economically, and give a better quality of carcass, when dressed.

We should be glad to receive any information on this subject from practical men, who are familiar with the subject. The information will be valuable for our agricultural readers.

ANIMAL AND VEGETABLE MANURES—CHARCOAL —UNDERDRAINING.

Manure, made from a compost where fish or flesh is the fertilising basis, has ever been found to be greatly exhausted the first season after applied to a growing crop. This is in perfect accordance with the principles of animal chemistry, as that nitrogen which supports living flesh, also hastens decomposition in the dead animal, until it is dissolved and dissipated into its original elements, so that the three summer months give sufficient heat and moisture to decompose thoroughly any animal substance. On the other hand, manure composed of animal excrements, hay, straw, or other refuse vegetable matter, is of much slower decomposition; hence its favorable effects may be noticed in several succeeding crops.

From close observation of the operations of nature, in her constant endeavors to fructify and reproduce, I have noticed that the seeds contained in stable manure, were continually sprouting into plants of considerable root; thus organising the escaping ammonia and carbonic acid, not taken up by the roots of the growing crop. These young plants, or weeds, when plowed or hoed under the surface, commence another decomposition; so that what would be wasted in the air, if no other vegetable life were present but that of the growing crop, is now organised and saved up for another season. Many farmers advocate the practice of summer fallow, on the ground that it destroys weeds; there man's economy comes strangely in conflict with nature, as her constant efforts are to cover all the waste places with organised plants, that nothing be lost which can add to the ultimate growth of the vegetable kingdom. If, in England, this plan of killing weeds by summer fallow, instead of by weeding and hoeing, were pursued, the average yield of wheat there, instead of being sixty bushels to the acre, would not probably exceed the average yield in this state, which is less than fifteen bushels. If a farmer would sow rye, or some other seed, between the hills of his corn, immediately after he has worked the soil for the last time, a fine, vegetable matting would cover the whole surface immediately after the corn is removed. This vegetable growth, plowed under the next spring, would almost supercede the necessity of any other application of manure. Wheat, I am told, has often been sowed in this way at the west, for a crop; but such an experiment is only advisable in that loose, rich, virgin soil peculiar to new farms, which requires little or no plowing. Yet, some of the best pieces of wheat I ever saw, whose plants grew so strong and healthily as to distance every enemy, was sowed after corn with only one plowing.

Charcoal.—I have seen ground where a coal pit was burned, continue without other manure to yield a much better vegetable growth than the rest of the field, for twelve or fifteen years in succession. Now, I take it, the charcoal gave up in its slow decomposition its potash and inorganic elements to the growing plants, while that part which still retained its mechanical structure, absorbed carbonic acid, and ammonia from the atmosphere, which were in like manner given up to the roots of plants. There are thousands of bushels of ground charcoal used by distillers and rectifiers in the city of New York alone. At Buffalo, thousands of bushels of the same article, after being saturated with the essential oil of distilled spirits, are thrown away as useless; all of which might be transported any distance on our canals, at very small expense, as leached ashes are purchased along the line of the Erie Canal, to transport to Long Island for manure. It strikes me that ground charcoal might be made still more profitable. In a compost heap, with menhaden fish, it must needs be invaluable.

Underdraining.—If subsoil plowing in a heavy, undrained soil is useless, it is almost certain that thorough underdraining, will enable us to dispense with subsoil plowing. Those who are disposed to deny this, let them go and examine the underdrained fields of John Johnson, in West Fayette, near Seneca Lake. All the ameliorating effects which are claimed for subsoil plowing are there produced by sinking tile drains from two and a half to three feet in depth. When this business of underdraining becomes general, the surface of land necessary to supply a family with its vegetable products will be small indeed.

Con Amore.

Waterloo, N. Y.

Ladies' Department.

YAUPON TEA.

"What sort of tea did you say, sir?" Yaupon tea, ma'am. I cannot give you the exact orthography of the word. It may be yopon, yawpon, yuopon, or yoopon, as I have never seen it written, and it sounds from the mouth of different individuals, like each of the above words.

"Well, never mind how it's spelled, but do tell us what it is like, and where it is used, and where it comes from, and all about it."

Yes ma'am, and so I might as well begin at the beginning. Tradition says it was first discovered upon the desert coast of Virginia, south of the Chesepeake Bay, or upon the equally desolate shore of North Carolina, and for a long time was only known to one family of Indians, who used to prepare it, and sell it to the early

settlers of that country. It now grows abundantly, both wild and cultivated, in all that region and among the primitive inhabitants is almost exclusively used instead of coffee or "store tea." The shrub somewhat resembles the box, is evergreen, of rather a pale color, grows ten or fifteen feet high, and is most natural to a poor sandy soil, or rather land without soil; that is, all sand. The bark, leaves, and twigs are all made use of; but I believe the young shoots are preferred. For winter use, they are gathered in the fall and laid in a trough, chopped up somewhat fine, and then put into an iron pot which is carefully heated, to wilt the leaves; then the whole is packed away in earthen jars, or dried, and is made by infusion in the ordinary way of making "Hyson," "Souchong," "Oolong," or any other *ong*, and makes quite as good a drink as one half of the China teas in the country.

Great faith is placed in the medicinal qualities of yaupon tea, by the people of the country where it grows. It is related of a North-Carolina gentleman, who once had a very bad cold, while at the Astor House, in New York, and called for some yaupon tea, and on the waiter expressing some doubts about being able to find the article, as he had never heard of it before, he thought him very ignorant and wondered where he came from not to know what yaupon tea was, as he had seen it and smelt it upon the table every day since he had been there; having mistaken the black tea for the real "native American" article. Certain it is, that it is a tea very much esteemed by a great many people, and it is worthy of inquiry whether it is not deserving a more extended cultivation, and more general use. I am told that in Princess-Anne county, Virginia, a little patch of yaupon shrubs may be seen attached to nearly every house, and that hundreds of persons there never tasted of any other tea, and that hundreds of others who have tried the "boughten stuff," prefer the domestic article. I was assured by my informant that one gentleman lost the vote of the county in consequence of a story raised by his opponent, that he did not like yaupon tea, and ridiculed the use of it, and if elected, would probably go against levying a duty on foreign tea, for the benefit of the yaupon manufacturer.

To save my popularity, I therefore speak publicly of the goodness of yaupon, and that it is undoubtedly better than half the *green* tea imported into this country. And I candidly recommend its increased cultivation. It would at least afford something new, and that is more than we can depend upon when we buy a new tea with some heretofore unheard-of name.

Ladies, when shall I have the pleasure of a cup of "yaupon" with you, raised in your own garden, and cured with your own hands?

SOLON.

REMARKS ON DIET.

WHILE travelling on a steamboat from the city of P., I was thrown in company with a lady who was taking a very pale, sickly little girl to the country, for the benefit of her health. She was much troubled with disordered stomach and bowels. In conversation with the lady on the subject, I inquired regarding the child's diet. "O," says she, "it results from no fault in diet, I assure you, for she is never allowed to eat a particle of fruit nor vegetables, and she has always been subject to such turns." I told her the results were what I should expect from such prohibitions; and directed her attention to a child then present, whose food consisted of the products of the field, garden, and dairy, exclusively; who scarcely ever had a bowel complaint. I argued that gross and highly concentrated diet frequently caused inaction and diseased action of the bowels, in turn, while the freedom and regularity of function produced by fruits and vegetables, prevent the accumulation of morbiferous matter in the system, which causes disease. The mischief, however, does not always terminate in the bowels; but whatever organ is the weakest will suffer most. But flesh is thought by some, to be necessary to support the strength of the system.

It has been argued that carniverous animals are the strongest. But are they? The lion may outdo the camel in a single effort; but can he endure the continued exertion of the latter, for an equal length of time, with as little sustenance? A flesh diet, too, directs an undue proportion of nervous energy to the base of the brain, thus robbing the intellect, and higher feelings of their natural stimulus. I do not mean to say that all should at once abandon animal food, but I do mean that we are quite too carniverous for the best interests of body or mind.

Important as is the kind of food, the quantity is of still greater importance. An Englishman on returning home from a visit to America, being asked what he thought of the Yankees, replied; "Their men are all gluttons, and their women all slaves," nowise complementary to either sex; but is there not much truth in what he said?

The theory and practice of Dr. Cheyne was, "The lightest and least of meats and drinks a person can be tolerable easy under, is the shortest and most infallible means to preserve life, health, and serenity." Those who feel an indisposition to take physical or mental exercise, immediately after meals, have eaten too much, and are exhausting, through their stomachs, energy due to the brain and muscles, and the power of the former is diminished by being overtasked. Hence, the greatest eaters are often thin in flesh, receiving less nourishment from a large quantity of food, than the vigorous digestive powers of moderate eaters extract from a much smaller amount. When any extraordinary effort is to be made, physically or mentally, the best preparation is rigid abstemiousness. Let those who would possess sound minds, in sound bodies, and attain the greatest degree of intellectual power and moral excellence, of which they are susceptible, keep a guard over appetite, and pursue their onward course with minds untrammelled and spirits free. AMANDA.

Foreign Agricultural News.

By the steamer Hibernia, we are in receipt of our foreign journals to 4th of May.

Markets.—*Ashes,* in steady demand. *Cotton,* an advance of ⅛*d.* to ¼*d.* per lb., with large sales. *Wheat* and *Beef,* a slight improvement in most other American products a trifling reduction.

Professorship of Culture in the Garden of Plants at Paris.—M. Decaisne has been recommended as the successor, in this important chair, of M. de Mirbel, who has resigned in consequence of illness and age.

Glass for Conservatories.—Rolled, rough, plate glass is coming into general use, in England, for conservatory roofs, much exposed to the sun, as a preventive of burning. Its excellence has now become a matter of certainty.

To Cultivate Canary Seed.—Sow ten pounds per acre, in rows a foot apart, on a clay loam, in October, and treat the growing crop exactly as you treat wheat. —*Agricultural Gazette.*

Glaze for Muslin.—Three pints of old pale linseed oil; sugar of lead, one ounce; and white resin four ounces. The sugar of lead must be ground with a small quantity of the oil, and added to the remainder, incorporated with the resin by means of a gentle heat. Lay it on the muslin with a brush. One coat annually, is sufficient.—*Gardeners' Chronicle.*

New Invention.—A portable instrument has lately been invented and brought into use, in England, for fumigating greenhouses, stoves, and frames, or shrubs and flowers in the open air, without injuring the most delicate plants; delivering the smoke cool, in a dense mass and effecting a great saving of tobacco.

Covering for Gravel Walks.—Decomposed sandstone is an excellent covering for walks, in order to bind any loose material of which they may be formed. Soon after its application, the surface becomes perfectly smooth, and almost as firm as a flag. The walks may be swept during wet weather, nearly as well as when it is dry.—*Gardeners' Chronicle.*

Death of Professor Kunth.—The foreign papers announce the death of this learned botanist, at Berlin, on the 22d of March. He was well known as the colleague of Baron Humboldt and M. Bonpland in the preparation of the great work on the new plants discovered by them in Equinoctial America; and latterly, for a useful enumeration of all known plants, of which, however, only a few volumes have appeared.

Salt and Lime.—Slack lime with brine, in some sheltered place, and apply 50 or 60 bushels per acre some months or so hence. Your best plan will be to do all this in midsummer, so as to be ready to apply it on the stubble in autumn.—*Agricultural Gazette.*

To Raise Turnips.—Pare and burn. Spread the ashes. Plow 3 inches deep, roll, harrow, and harrow again. When that plowing is reduced to a tilth, cross plow at double the depth, and repeat the tillage. Sow 3 cwt. superphosphate of lime, broadcast, drill up in rows, 26 inches apart, and sow 3 lbs. of seed on the tops of the drills. Sow 3 or 4 lbs. per acre, in rows 2 feet or more apart, and single out to 10 or 12 inches.—*Ibid.*

Tanners' Bark as a Manure.—This, in its manufacturing state, is unfit for cultivators to use; but when exhausted of its tannin, and allowed to decay, it ceases to be "tanners' bark," and becomes, like all other decaying vegetable substances, valuable to the cultivator in proportion to its degree of decay. The worst way of using it is to burn it to ashes; the best way is to *char* it. Whether charred or merely decayed, it should be mixed with putrifying matters, such as the contents of cesspools, or rotten dung, and also earth or any other common material, *except lime.* It then becomes one of the most valuable of all manures.—*Agricultuzal Gaz.*

The Best Mode of Mixing Salt with Lime.—Lay three inches of unslacked lime, ten feet long and six wide, as a bed, and then spread one inch thich of common salt. Repeat these layers till a bed two feet high is formed. If the mixture is made in summer, when it is dry, it may be in the open air; at other times, under cover. After ten days, turn it over, and repeat the turnings five or six times, at intervals of seven days; spread from a cart about 60 bushels per acre, covering the horse with a sheet or cloth, to prevent burning the hair off. It should be plowed in before wheat sowing. —*Hillyard's Practical Farming.*

Seed Oats.—Oats intended for seed should not be allowed to be too ripe before cutting, as considerable loss is sustained in all the various processes of manufactures, and if sown upon damp soils, and uncongenial climates, are apt to burst, especially if the seed has been grown in the neighborhood of the seaboard. Another reason why they should not be too ripe, is their aptitude to "sheel," by the powerful machines so generally used for threshing.—*North-British Agriculturist.*

Spent Tanners' Bark a good Manure for Strawberries.—Perhaps the following experiment with strwberries in tan, near Edinburgh, may prove useful. The soil was very light, and appeared unfit for their growth, yet finer fruit, or of better flavor I have seldom seen. This was entirely owing to a covering of old tanners' bark, about an inch thick, being applied between the rows. The bark not only kept the ground moist and the fruit clean, but it is the material of all others in which this plant most delights. Many persons may have remarked how almost all plants, but particularly the strawberry, will root into the old tan of a bed in which they have been forced, and yet, because they know new tan will kill weeds, they do not think it valuable as a manure. In the same garden were beds of strawberries, which had not been covered, but after growing and flowering well, these bore no fruit worth gathering (a very common thing if the soil is too light); others were almost burnt up, whilst those to which the tan had been applied were luxuriant, and the ground was covered with fine runners, fit to plant out, though the fruit was just in perfection.—*Gardeners' Chronicle.*

Green Vegetable Manure.—This has been used for upwards of 2,000 years, and in countries where the art of culture has been most attended to. Various crops have been sown with no other view than to be buried in when fully grown, to render the soil fit for crops of more importance. Every species of vegetable, in a green state, acts more or less as fertilisers, some probably more than others, according to their power of draining organic matter from the air, and inorganic from the subsoil. It is, therefore, no detriment to the soil to be covered with weeds, providing they are not allowed to seed, and that they be dug into the ground instead of being hoed down and raked off, which latter process is a direct robbery of the soil. Green vegetable manure is most effective on light, sandy soils, and least so on peaty lands, It is surprising how much valuable manure is wasted in gardens, by carrying it to the compost heap, instead of at once burying it in the soil; and how much is lost or neglected in woods and waste places, from mere indolence, or from want of knowing that rampant nettles and rank-growing plants, constitute a great amount of the food of plants. Tree leaves, and the mowings of lawns are valuable manures, and far too seldom turned to useful account. For using green vegetable manure, it should be applied as soon as possible after it is cut.—*North-British Agriculturist.*

Editors' Table.

Sale of Shorthorns.—We understand that Mr. Vail, of Troy, has recently made a sale of five head of shorthorn cattle, to Mr. Belknap, of Michigan. The bull is called American Comet, and was got by Meteor, out of his imported cow, Hilpa. Mr. Vail has also just sold a young shorthorn bull and heifer to Mr. O. A. Brewster, President of the New-Hampshire State Agricultural Society. Col. J. M. Sherwood, of Auburn, has also sold Mr. Belknap a three-year-old heifer, called LaBelle, got by Archer, and in calf to his recently imported bull, Duke of Cambridge, bred by the late Mr. Bates, of Kirkleavington, Yorkshire. For all these animals, good prices were obtained; and in noticing these sales, it affords us pleasure to add that the demand for well-bred stock is greatly on the increase, and we trust that judicious breeders will soon find themselves better remunerated than heretofore We received and executed more orders for imported stock, last year, than for any succeeding three years since 1844.

Scythe Rifles.—We beg to call the attention of our readers to the advertisement on page 200, of Clark's celebrated Quinebaug scythe rifles. They are far superior to any others now in use for setting a good edge.

Fat Cattle.—A yoke of oxen, fatted by J. L. Mosier, of Naples, Ontario county, drew a crowd this morning. They are the largest animals we ever saw. The railroad freight bill rates them at over 6,300 lbs! One of them girths 10 feet 6 inches, and the other 10 feet. They are five years old, and are destined to gratify the palates of the New-Yorkers.—*Albany Evening Journal.*

Old Leather For Manure.—Whoever rode through any country village or large town in America, a few years ago, could not have failed to notice piles of old shoes, heel taps, strings, and bits of leather, of every hue and description, forming a very gradually decaying mass, which in the course of 20 to 30 years, might probably reach that state of decomposition that would entitle it to the distinction of a tolerable manure. In the mean time, a small patch of ground attached to the house and workshop, that furnished these sweepings, and the few fruit trees surrounding it, were absolutely starving for want of food, which might have been profusely afforded, by converting this unsightly heap into manure, by mixing it with quicklime, strong ley, or sulphuric acid, and transferring these ornaments of the road to the vegetables and foliage of the garden.

Protection of Small, Harmless Birds.—The Legislature of New Jersey, at their last session, passed an act for the protection of the following-named birds, and their eggs, imposing a penalty of five dollars on every one known to kill or destroy them, except on their own premises:—Night or Mosquito Hawk; Chimney Swallow; Barn Swallow; Martin, or Swift; Whip-poor-will; Cuckoo; King Bird, or Bee Martin; Woodpecker; Claip, or High Hole; Cat Bird; Wren; Blue Bird; Meadow Lark; Brown Thrasher; Dove; Fire Bird, or Summer Red Bird; Hanging Bird; Ground Robin, or Chewink; Boblink, or Rice Bird; Robin; Snow or Chipping Bird; Sparrow; Carolina Lit; Warbler; Bat; Black Bird; Blue Jay; and the small Owl.

Will some intelligent member of the New-Jersey Legislature favor us with a communication, stating the particular reasons for protecting each of the above-named birds, with the names under which they are usually described by ornithologists.

An Essay on Climate, by H. J. Ehlers. This is a neat pamphlet sent us by the author. It represents some new views on the causes of variation in the temperature of the eastern and western continents. After a good deal of ingenious illustration and argument, the author arrives at the conclusion "that neither the supposed protection of the old world by mountains, nor the masses of ice in the north of America, nor the lakes, nor the swamps, nor the woods of this country, nor the sandy desserts of Asia and Africa, *can, in the least, produce the existing difference in the climate of the two continents.* We, therefore, behold in *subterranean heat, the only and universal cause of this difference,* and look upon the above-mentioned *local causes* as being only *retroactive* to this universal cause."

Long-Island Lands.—We would call the attention of northern farmers, mechanics, tradesmen and others in this city, who wish to change their residence, to the advertisement of Dr. Peck, on page 199, who offers for sale a large tract of cheap land on Long Island. For its fine climate, susceptibility of improvement, and nearness to market, as well as the facility of reaching New York, by railroad, we refer the reader to the back volumes of this journal.

The Curculio.—A friend attributes the loss of many of the apples in Worcester county, Mass., to the presence of the curculio, and says a neighbor has conclusive proofs of their agency in the destruction of the apples. Have any one of our readers any testimony on this head? If so, they will oblige us, and the public by communicating it. Mr. Tudor, of Nahant, caught immense quantities of the curculio, last season, by suspending in the branches of the trees, large-mouthed vials or jars, partially filled with honey, or molasses and water. They were attracted by the sweet liquid, as flies frequently are. So many were destroyed in this way, that he secured a tolerable crop of fruit.

The Quadrupeds of North America, by Messrs. Audubon & Bachman. No. 4 of this no less beautiful than useful work is now issued. It contains the Canada lynx, a ferocious looking monster enough; a group of cat squirrils, gamboling on the dead limbs of a mossy old tree; a pair of marsh hares couching slily amid tall grass and aquatic plants; soft-haired squirrels on a scrub oak, their cheeks bursting with a store of acorns, which they are providently bearing to their winter quarters; last, and also *least,* the pretty little ground squirrel—one sitting upon an oblong hillock as demure as a cat in consultation, while the other is seemingly starting off at a wild bound, in quest of adventures. The scenery introduced into these plates is well done, and harmonises pleasingly with the character of the animals. We look over every number of this admirable work with intense delight, for it invariably carries us back to our boyish days. When wandering over wild hills and down dales, and across soft meadows, we often encountered many of these animals, which the pencil of Audubon so naturally presents, in his moving, breathing pages.

Buist's Family Kitchen Garden.—The best work on the subject extant. A new edition just published by C. M. Saxton and E. Blanchard, 120 Fulton street, New York. See advertisement, on page 199.

A Soft Answer Turneth Away Wrath.—The horse of a pious man in Massachusetts happening to stray into the road, a neighbor of the man who owned the horse, put him into the pound. Meeting the owner soon after, he told him what he had done, and added, "If I ever catch him in the road hereafter, I'll do so again." "Neighbor," replied the other, "not long since I looked out of my window in the night, and saw your cattle in my mowing grounds. I drove them out and shut them in your yard; I'll do it again!" Struck with the reply, the man liberated the horse from the pound, and paid the charges.

Review of the Market.

PRICES CURRENT IN NEW YORK, MAY 18, 1850.

ASHES, Pot,	₱ 100 lbs.	$5.50	@	$5.56
Pearl,	" do.	5.62	"	5.69
BALE ROPE,	" lb.	9	"	11
BARK, Quercitron,	" ton.	39.00	"	41.00
BEANS, White,	" bushel.	75	"	1.25
BEESWAX, American, Yellow,	" lb.	20	"	26
BOLT ROPE,	" "	10	"	11
BONES, Ground,	" bushel.	45	"	55
BRISTLES, American,	" lb.	25	"	65
BUTTER, Table,	" "	15	"	25
Shipping,	" "	9	"	15
CANDLES, Mould, Tallow,	" "	10	"	13
Sperm,	" "	25	"	47
Stearine,	" "	25	"	30
CHEESE,	" "	5	"	10
COAL, Anthracite,	2,000 lbs.	5.00	"	6.00
CORDAGE, American,	" lb.	11	"	13
COTTON,	" "	10	"	15
COTTON BAGGING, Am. hemp,	" yard.	15	"	16
FEATHERS,	" lb.	30	"	40
FLAX, American,	" "	8	"	9
FLOUR, Ordinary,	" bbl.	4.25	"	5.25
Fancy,	" "	5.50	"	6.50
Richmond City Mills,	" "	6.50	"	6.75
Buckwheat,	" "	—	"	—
Rye,	" "	2.75	"	3.00
GRAIN—Wheat, Western,	" bushel.	95	"	1.36
" Red and Mixed,	" "	80	"	1.15
Rye,	" "	58	"	60
Corn, Northern,	" "	60	"	64
" Southern,	" "	59	"	63
Barley,	" "	60	"	65
Oats,	" "	40	"	47
GUANO, Peruvian,	2,000 lbs.	45.00	"	50.00
Patagonian,	" do.	34.00	"	35.00
HAY, in Bales,	" 100 lbs.	50	"	63
HEMP, Russia, Clean,	" ton.	215.00	"	220.00
American, Water-rotted,	" "	160.00	"	200.00
" Dew-rotted,	" "	140.00	"	175.00
HIDES, Dry Southern,	" "	9	"	10½
HOPS,	" lb.	6	"	18
HORNS,	" 100.	2.00	"	10.00
LEAD, Pig,	" 100 lbs.	5.00	"	5.13
Pipes for Pumps, &c.,	" lb.	5	"	7
MEAL, Corn,	" bbl.	2.75	"	3.25
Corn,	" hhd.	14.00	"	14.25
MOLASSES, New-Orleans,	" gallon.	22	"	26
MUSTARD, American,	" lb.	7	"	10
NAVAL STORES—Tar,	" bbl.	1.50	"	1.75
Pitch,	" "	1.25	"	1.75
Rosin,	" "	1.00	"	1.20
Turpentine,	" "	2.44	"	2.75
Spirits of Turpentine,	" gallon.	32	"	34
OIL, Linseed, American,	" "	73	"	75
Castor,	" "	2.00	"	2.25
Lard,	" "	60	"	70
OIL CAKE,	" 100 lbs.	1.25	"	1.50
PEAS, Field,	" bushel.	75	"	1.25
Black-Eyed,	" 2 "	1.75	"	2.00
PLASTER OF PARIS,	" ton.	2.00	"	2·75
Ground, in barrels of	300 lbs.	1.12	"	1.25
PROVISIONS—Beef, Mess,	₱ bbl.	8.50	"	11.00
" Prime,	" "	5.25	"	8.00
" Smoked,	" lb.	6	"	12
" Rounds, in Pickle	"	4	"	6
Pork, Mess,	₱ bbl.	10.00	"	12.00
" Prime,	" "	6.50	"	10.00
Lard,	" lb.	6	"	7
Bacon Sides, Smoked,	" "	3	"	4¼
" in Pickle,	" "	3	"	4
Hams, Smoked,	" "	5	"	9
" Pickled,	" "	4	"	7
Shoulders, Smoked,	" "	4	"	6
" Pickled,	" "	3	"	5
RICE,	₱ 100 lbs.	2.25	"	3.62
SALT,	" sack.	95	"	2.00
" Common,	" bushel.	20	"	35
SEEDS—Clover,	" lb.	6	"	9
Timothy,	" bushel.	2.00	"	3.50
Flax, Clean,	" "	1,60	"	1.65
" Rough,	" "	1.50	"	1.60
SODA, Ash, (80 per cent. soda,)	" lb.	3	"	—
Sulphate Soda, Ground,	" "	1	"	—
SUGAR, New-Orleans,	" "	4	"	6
SUMACH, American,	" ton.	35.00	"	37.00
TALLOW,	" lb.	7	"	8
TOBACCO,	" "	3	"	11
WHISKEY, American,	" gallon.	23	"	25
WOOLS, Saxony,	" lb.	40	"	60
Merino,	" "	35	"	40
Grade Merino,	" "	30	"	35
Common,	" "	20	"	30

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Beef Cattle.—An abundant supply, sales varying from $6 to $8.50 per hundred. Market firm—none left over.

Cows and Calves.—The sales of these have been active, the supply having hardly met the demands. The prices varied from $22 to 42.50. None left over.

Sheep and Lambs.—The prices of these continue firm, varying from $2 to $6. Left unsold, 150. May 13.

REMARKS.—Seeds being out of season are low and depressed. Flour is a little better than at our last.

The Weather still continues cool, and crops and planting thus far, very backward. Cotton is as unpromising as last year, and the prospects respecting it thus far are gloomy enough. Fruit is uncommonly promising.

To CORRESPONDENTS.—Communications have been received from S. P. Chapman, Long-Island Subscriber, Buffaloe, E. H. Brown, Paris M. Walker, E. Hammond, H. B. R., Urbane B. Oglesby, M. W. Philips, and Luke Derwin.

ACKNOWLEDGEMENTS.—Transactions of the Trumbull-County, (Ohio,) Agricultural Society, at the Fourth Annual Meeting, held at Warren, on the 25th, 26th, and 27th of September, 1849, with the Address of Professor Samuel St. John; Report of the York-County, (New Brunswick,) General Agricultural Society for the year 1849; Proceedings of the American Association for the Advancement of Science, for 1849.

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One of the finest trout streams of the island runs through this land, and in the north parts of the tract, is the famous Ronkonkoma Pond, or Lake, one of the most beautiiful sheets of water that can be found anywhere, of about three miles in circuit, the shores and banks of which are pleasant and picturesque in a high degree.

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Pedigree of Exeter.—Exeter is of the Princess tribe of Shorthorns—was calved in June 1848, and bred by Mr. John Stephenson, of Wolviston, Durham, England. He was got by Napier, (6,238,)—out of Jessamine, by Commodore (3,452)—Flora, by Belvedere, (1,706)—Jessey, by Belvedere. (1,706,)—Cherry by Waterloo, (2,816,) &c. See English Herd Book, Vol. V., for full pedigree

Exeter was selected for Mr. Sheafe, by a first-rate judge of shorthorn stock, and was considered one of the *very best bulls* in England. Quite a high price was paid for him; and it is believed that his superior, if even his equal, has never before been imported into this country. He carries an enormous brisket for his age, and his style, handling, and quality are of the finest kind. His color is mostly a beautiful yellow-red, which is a bright-red with a fine golden or saffron undertinge, arising from a rich yellow skin. He is the *only bull of this peculiarly desirable red*, ever imported into America. Calves got by him, out of this herd of cows, will fetch a high price the moment they are dropped.

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